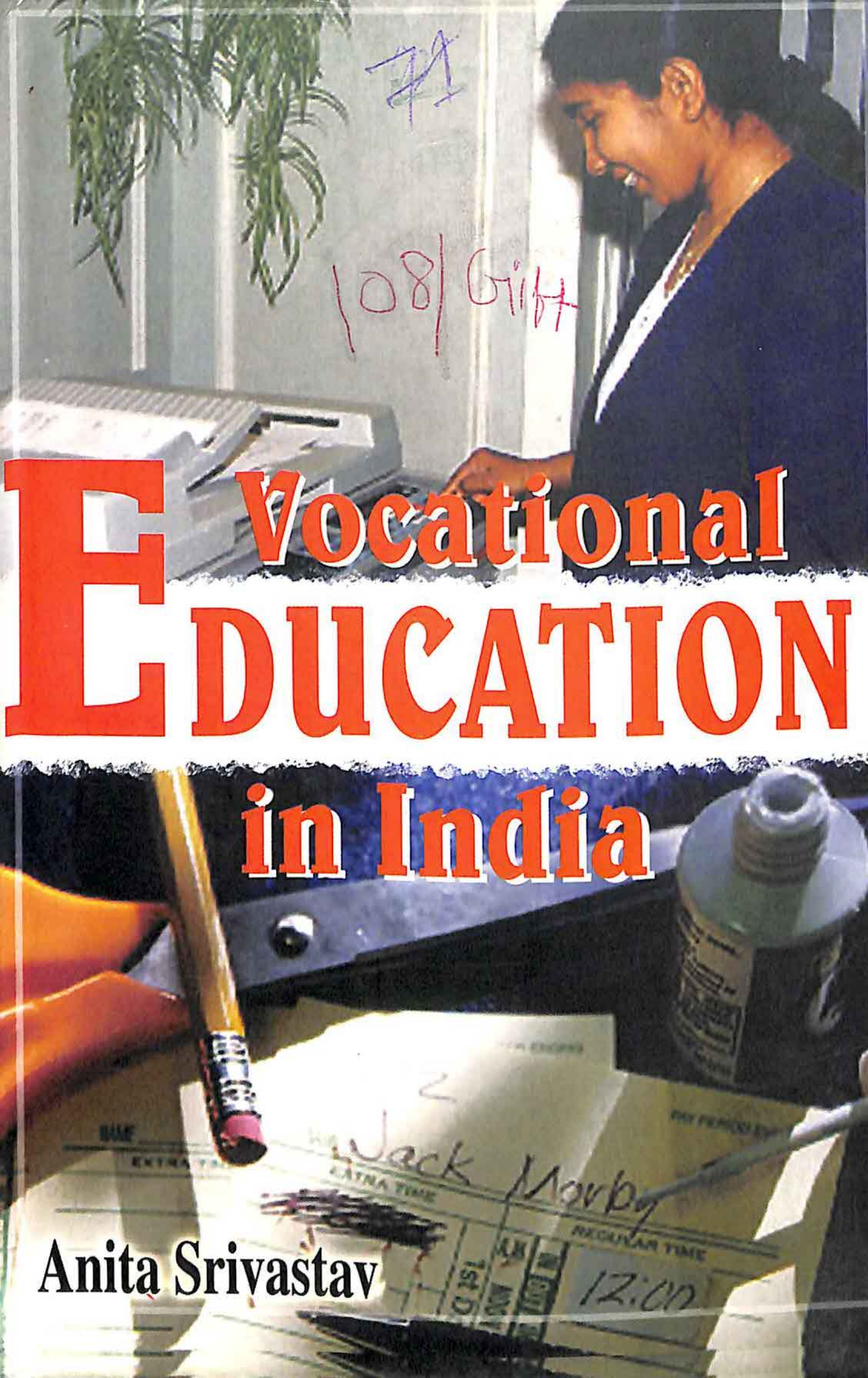

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Vocational EDUCATION in India

Anita Srivastav

Life long and continuing education answers the basic problems of education in future. Education has always combined eternal values and cultural objectives with the need to respond to the social, economic and industrial demands of the age. As such the educational administration plays a key role in the process of the development of the education. This book tries to initiate meaningful, academic interactions and a free, frank and bold dialogue in the educational area of high public interest. The book effectively marshals a wide range of material and contains an excellent exposition of the problems of modern day education. This book is addressed to administrators, planters and educators working in the field of education and training with a view to stimulating interest and attention in the areas of education and its related field.

This book is indeed a valuable edition and will be of immense use of educators, planners as well as layman interested in the educational system.

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VOCATIONAL EDUCATION IN INDIA

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ANITA SRIVASTAV

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PREFACE

Life long and continuous education is an integral part of the scheme of development of an individual society, a state or a nation. It answers the basic problems of education in future. It is because it intends to aim at the whole evolving human being to all his aspects and throughout his life time because it did not only transcends the artificial barriers between academic and non-academic education and the traditional distinction between conventional public educator and adult education. The greatest claim of education in the twenty first century to be called "Modern" in its distinctive features which differentiate it from the old and traditional system that is commonly termed as indigenous education.

Even though Indian educational scenario, over the past few decades, has been characterised by massive quantitative expansion at all levels, it is still faced with a staggering back log of high literacy levels there is a school of though which suggests that some how, out of muddy waters of life, we have distitled that essence which is called pure education.

The present book is divided into eight chapters which show a significant contribution to the debate on some of the major issues concerning education it not only analysized the imperatives, dimensions and deficiencies but also provide valuable suggestions for keeping the modern educational system and efficiency in tune with the fast changing situations and requirements.

All chapters present a kaleidoscopic view of the education system and the Indian reality and strive to grapple with some of the basic issues which create dilemmas for the educator as a service organization in a democratic society beside discussing the latest views. If besides entertaining the reader, this book succeed in creating an enlightened awareness in the field of education, its mission would be fulfilled. I may humbly add that I would took upon the constructive criticism of my readers with gratitude as such interaction would altimately enhance the aims and objectives of this book.

Anita Srivastav

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Chapter-1

Meaning and Scope of Vocational Education

Through the ages man has worked for his livelihood, has learned through accumulated experiences how to face and control natural forces and how to live within the limited physical resources for the good of all. All this mass of rich human experience achieved through work has stimulated man to seek means and methods of increasing his efficiency in work. As a result, the method of learning through organized experience has come into use. Apprenticeship or training under guild organization originated during ancient times and continued during the middle ages–was among the first forms or organized learning. The vocational institute or school, which is relatively recent origin, is a modern example of institutionalized learning to work through consciously organized instruction.

Since the beginning of time occupational knowledge and manual skill have, in one form or another, been transmitted from man to man and from generation to generation. This transmitting process, whatever its form of organization, has developed into the educational process that has now given rise to expansions and developments of what may be termed as vocational education. The diffusion of the occupational knowledge and the transmittal of the manipulative skill, underlying occupations and callings of man, may be interpreted as the forerunner of the various concepts of vocational education. In this broad sense, vocational education becomes that part of the total experience whereby man learns to carry on a gainful occupation proficiently and efficiently. The term "vocational education" as used in this broad sense is meant to cover both unorganized and organized methods of transmitting knowledge, skills and competencies.

The age-old methods of learning on the job with no or little assistance and supervision is the unorganized form, while specific vocational education through the institutionalized process is the organized form. In a strictly utilitarian sense, "vocational education or training implies a series of organized and controlled learning experiences used to educate or train any person or persons for a given employment". The instructing process is organized to the extent the instructional objectives are clearly defined and understood and the instructor knows exactly what knowledge and skill it his duty to impart most effectively.

Through the ages, however, there has been but one way for the unskilled worker to learn to do his work, namely, the "pick up" method, in which observation, imitation and individual initiative constitute the sole means of training. It is only in the recent years that any serious attention is given to the training of unskilled worker to do his tasks efficiently. The unprecedented developments in science and technology have tended to expand vocational areas for which organized education or training is required. Vocational education and training has thus become both a consequence and a cause of progress.

VOCATIONAL EDUCATION: CONCEPTS AND MEANINGS

There are several differing concepts and meanings of vocational education or training. Most of these have arisen from traditional practices and the meaning of terms used and their implications. An examination of these will reveal the basic differences for certain practices and relationships in vocational or occupational education, which are fundamental in nature and in programmes

One such concept is that vocational education is the education or training of workers. Its origin may be traced to the early apprenticeship training practices. This concept implies that any kind of education or training in which a worker participates is vocational education. It also suggests that humans have dissimilar abilities and the persons having neither the capacity nor the desire to study the traditional curriculum be prevailed upon to opt for vocational trades more adapted to their taste and abilities. Implicit in the concept is the meaning that working class children be trained for factory work simply because that is their destiny. This kind of thinking does not fit in with the principle of equal educational opportunity.

Another concept is that vocational education is the education for manual work. This concept centers on the ideas of ability to work with hands rather than mind-with a curriculum of certain manual activities like leather work, wood work, metal work, drawing work, for example. The knowledge and skills learned from such education or training just underlie mental activities relevant to the curriculum but without relevance to specific occupational competence. This concept has resulted in the present-day practice of placing drop-outs, physically handicapped and socially disadvantaged young people in vocational courses without considering learners' interest and ability. A sizeable proportion of vocational institutions (other than I.T.Is.) in our country many perhaps be described as manual training institutions.

Yet another concepts is that vocational education is education in certain specified subjects, which may be of vocational or technical nature, generally confirmed to secondary stage of education. This concept implies that a specified part of the curriculum is vocational or technical, the remaining part falling under general or liberal education coverage. Here vocational educational is not to supplement it. The essential merit of the idea is that the total education imparted has both cultural and utility values fitting an individual for progressing in his chosen field of activity with in-built opportunity for vertical mobility. Technical high school type of education in our country is the example.

One more concept is that vocational education is that education which is craft-oriented. The major objectives of craft-oriented education or training is to aid learners in greatest work efficiency possible in earning their living by providing special instruction in single crafts or trades. The education or training given in this manner lacks academic or cultural aspects of education. Educators, therefore, feel that any craft or trade-centered system of education or training is a divisioning process, segregating vocational from general education mainstream. The learners that are unable to profit from the traditional academic learning generally opt for this sort of industrial training, as given in our I.T.Is. Although the institutions are equipped to offer practical preparation for most of the recognized trades, the courses are not in accord with the objectives of a mass system of common or comprehensive schools as in vogue in U.K., U.S.A. and Japan.

Finally, there is the concept that vocational education is education for productive purpose or socially useful productive work. When the objective is a product or a service for consumer use, the work involved is termed as productive work or socially useful productive work. Implicit in this modern concept is the meaning that as the individual seeks and finds new and improved ways of working through education or training, he increases his vocational efficiency. Gainful pursuits, regular occupations or vocations are becoming increasingly important in our industrialized society. Vocational education for productive work basically provides learning experience of an avocational nature, training learners to fit the requirements of a hierarchical work force. This concept is in accord with the present-day movement of "education for individual needs", education with the purpose "to prepare persons who would contribute to industrial, agricultural and commercial efficiency". This concept also leads to the theme that "all education, when considered in relation to the great masses of the peoples of a country, must be measured finally by the single test of usefulness and utility". Education imparted in this manner should aim at the development of proficient worker as well as good-citizens.

These concepts and definitions of vocational education reveal varying interpretations, meanings and purposes. A review of the development of vocational education and the literature associated with it points to the fact that such variations exist and come about as a result of the history and development of a country and many diverging opinions arising in determining the ways and means of the education system fitting in with the mores and traditions of the societies it constitutes.

Viewed in the historical perspective, the development of vocational education or training has been taken place through the following successive stage : (i) individual initiative and resourcefulness; (ii) unconscious absorption and imitation ;(iii) conscious imitation and organized training in the home; (iv) apprenticeship or guild system practices; (v) pick-up learning under specialization; and (vi) organized training through such means as vocational or occupational institutions and modernized apprenticeship under training-in -industry process. Within recent years the progress of science and technology has called increasingly for the systematic organized training of skilled personnel to man great numbers of new jobs and many old jobs with profoundly modified process. Operations once performed manually are now largely performed through machines, thus the emphasis in training shifting from the acquisition of manipulative skill to the acquisition of technical knowledge intelligently on the job or the activities associated with it. This fact has led to the central idea of a organizing education systematically and efficiently through the establishment of vocational training at work places.

Today, as always, the instructional process is said to be conscious and organized to the extent the methods in transmitting knowledge and skills are well-organized both pedagogically and administratively. In terms of pedagogical detains, the methods of instructions as practiced in institutions may be better organized than those followed in training establishments of industry. But the institutional system suffers from the weakness of its inability to secure and use participating experience as subject-matter for training. On the other hand, the training given by the shop or offices is likely to be less pedagogically oriented-with the emphasis occupational psychology of the learner. Viewed from the directness of aim, the recognition of group characteristics and the use of the real experience as an instruction device, training-in-industry is regarded as an effectively successful vocational instruction system.

GENERAL PRINCIPLES OF VOCATIONAL EDUCATION

Principles of vocational education serve a useful purpose in the delineation of policies, processes and procedures underlying vocational education. Principles of vocational education are derived from past experiences and judgments that have proved to be satisfactory and effective. Principles growing out of the deliberations and general agreement among individuals and bodies interested in and concerned with vocational education find incorporation in the basic vocational education laws.

The general principles of vocational education are delineated below. They are established principally on the basis of rich experience and judgment of the late Dr. Charles, a leader in vocational education in the U.S.A. He was the first director of the Federal Board for Vocational Education in U.S.A. Dr. Charles was acknowledge as a great authority on vocational education enunciated here have stood the test of times and they are as valid now as ever before.

1. Vocational education will be efficient in proportion

as the environment in which the learner is trained is a replica of the environment in which he must subsequently work.

2. Effective vocational education can only be given where the training jobs are carried out in the same way with the same operations, the same tools and the same machines as in the occupation itself.
3. Vocational education will be effective in pro portion as it trains the individual directly and specifically in the thinking habits and the manipulative habits required in the occupation itself.
4. Vocational education will be effective in pro portion as it enables each individual to capitalize upon his interest, aptitude and intrinsic intelligence to the highest possible degree.
5. Effective vocational education for any profession, calling trade, occupation or job can only be given to the selective group of individuals who need it, and can profit by it.
6. Vocational education will be effective in pro portion as the specific training experience for forming right habits of doing and thinking are repeated to the point that these habits become fixed to the degree necessary for gainful employment.
7. Vocational education will be effective in proportion as the instructor has had successful experience in the application of knowledge and skills to the operations and process he under takes to teach.
8. For every occupation there is a minimum of productive ability, which an individual must possess in order to secure or retain employment in that oc-

cupation. If vocational education is not carried to that point with that individual, it is neither personally or socially effective.

9. Vocational education must recognize the conditions as they are and must train individuals to meet the demands of the labour market even though it may be true that more efficient ways of conditioning the occupation may be known and that better working condition are rightly desirable.
10. For every occupation there is a body of content which is peculiar to that occupation and which practically has no functioning value in any other occupation.
11. Vocational education will render efficient social services in proportion as it meets the specific training needs of any group at the time they need it, and in such a way that they can most effectively profit by the instruction.
12. Vocational education will be socially efficient in production as in its personal relations with learners it takes into consideration the particular characteristics of any particular group which it serves.
13. The administration of vocational education will be efficient in proportion as it is elastic and fluid rather than rigid and standardized.
14. While every reasonable effort should be made to reduce per capita cost, there is a minimum below which effective vocational education cannot be attempted.

Vocational education-involving the institution, the home, and the industry or business-frequently evolves processes and procedures different from those of general education. This fact makes it necessary to understand the importance of the principles presented above.

VOCATIONAL EDUCATION VERSUS GENERAL EDUCATION

The term general education is used to mean the education that should prepare persons to live more intelligently as citizens and to understand and enjoy life. To that end, general education implies the knowledge, skills and attitude needed by persons for successful and purposeful living.

The term vocational education is used to mean the education that should prepare persons to work more efficiently. Efficiently vocational education implies specific education and training in the usable knowledge, skills and competencies for the occupation in question.

However, different concepts of the relationship of general education and vocational education are there. Mostly they arise from differences in educational philosophy. Some educationists and administrators contend that a general or fundamental content is the best preparation for a vocation. They advocate that courses in such areas as general agriculture, domestic science and general business provides appropriate education or training for both general and vocational needs and be included in the general education subjects. However, vocational educators differ on the point that courses designed this way do not provide education for the specific competencies needed in preparing for a vocation. These educators contend that courses of a specific nature as well as those of a general nature are needed in education of workers. In a democratic system of education, they believe, every citizen should have the opportunity, as part of his training, for both types of education.

In the present-day situation, general education and vocational education are major divisions of the total education process. Each of them is of equal importance, and both of them are necessary in the education of workers. This suggests that general education and vocational education have much to contribute to each other and to the total education process. Both general and vocational educators should, therefore, strive to achieve the proper co-ordination of these two divisions of education within the total education process.

POLYVALENT EDUCATION

The modern trends are to avoid multiple-streams at the school stage of education. Dividing education in water-tight compartments of general education and vocational education, and thus segregating the students at an early age, is rather unsound and unfair educationally. It would be unwise for students nearly at the age of fourteen or so to opt for a vocational education or training course with a seemingly doubtful career development and prospective future. However, if they are offered a common or comprehensive system of school education bivalent in character and content, that is, a combination of general academic subjects and vocational subjects, such an arrangement could not only provide academic learning but also learning experiences for some vocation. A scheme of education of this kind organized under one shelter – increasingly adopted in U.K., U.S.A. and Japan- tends to promote employability of students and also help them develop their understanding and practical sense so useful in all walks of life. In a broad-based polyvalent education system with multi-options strategy, students get acquainted with academic knowledge, information and practice of several trades or subjects which all stand them in good stead in any occupation. With such a comprehensive organization, vocational diversification at a young age is dispensed with. Rigid bifurcation too early in student life tends to stratify personal development and retard progressive outlook of young people. Uniformly organized secondary education without a vocational or occupational education component or any options within the choice of subjects, is an unintegrated system of education, and is thus out of tune with the current thinking and practice.

However, in circumstances where sufficiently intensive vocational education or training cannot be built in the secondary education system, as is mostly the case in our country, vocational bifurcation or diversification has inevitably to be accepted. Yet, wherever feasible, efforts should not be spared to include vocational bias in the mainstream of general education as it would satisfy an important requirement of complete education, that is, preparing a young person in education essentially with his own effort and choice, directed towards individual growth combined with satisfying the needs of the modern society.

SUCH EDUCATION BECOMES REALISTIC AND USEFUL

The Education Commission too visualized the future trend of school education to be towards a fruitful mingling of general education and vocational education-greatest education containing some elements of vocational and technical education, and vocational education, in turn, having an element of general education. The Commission did not favour a complete separation between general education and vocational education.

FURTHER OR EXTENSION EDUCATION

It is not possible to give learners a ready-made complete package of knowledge and skills for life at any time or period. In the modern context, workers are continually in need of adaptation, readaptation to changing demands and exigency of situation, and are therefore constantly required to face renewal of knowledge and skills. The sweeping changes in products, processes and techniques arising from scientific and technological discoveries and innovations result in far-reaching change in training policies, methods and standards required to meet the new exacting demands. This calls for organized systematic ways to train and retrain workers for a wide variety of occupations, spread over large geographical areas, equipped with higher and newer grades of occupational knowledge and skills. As efficiency in use of human effort progress, as sub-division of operations and tasks lead more to specialization of jobs, as the scale of production increases. The occupations tend to become less general and more specific. This leads to demands for knowledge; skills and competencies that are immediate, direct and specialized.

In the modern world of industry and business, the incoming generations tend to nurture ambition and aspiration to step up the ladder of job hierarchy. This rightful desire for upward mobility is strengthened when opportunity are offered to the workers, within their organization or outside it, for the training or further training which fit them for the new job responsibilities.

The fundamental principle of the present-day vocational education is that every learner should be given as much education or training he wants at a particular time. Instead of complete preparation for a life occupation, it may be just enough when an individual is equipped sufficiently with knowledge and skills which may help him in meeting his immediate social or economic needs and responsibilities. Through a well-devised system of further or extension education, persons may get prepared for newer or higher occupational calling and responsibilities under the rapidly changing socioeconomic order. Further education can help a person in upgrading his job or in seeking alternative occupation or in getting training related to any other personal growth and development.

Further education in vocational and technical areas covers a field of great diversity and usefulness, as is the case in U.K., where-"it is the fastest growing and in many ways the most successful and inventive areas of English education". When properly organized and developed, further education system can provide immense scope and vertical mobility of young working persons towards their goal of better and higher academic and professional achievements leading to methods and routes of study, facilities for further education can be provide extensively and economically for the emerging class of skilled persons that will have the ability and academic standing to enter advanced education and training programmes. For example, widening the range of routes available-part-time day/evening., block release, sandwich, directed private study or correspondence route or mixing of routes-should give the widest possible opportunity for students to study or various courses based on the principle of multiple-entry credit system, may make it possible for motivated students to enter a higher stage of course with the minimum of academic entry requirements.

A system of further education of the envisaged kind shall thus prove to be a major integrative factor, a highly motivating force for successful career development of young persons who have had the basic initial groundings in vocational education.

OCCUPATIONAL PREPARATION

To put the discussion on occupational preparation in proper perspective, it will be useful to highlight the distinguishing aspects of education and training.

It is important to underscore the fact that education by itself, except in certain cases, rarely generates the potential for entry to the first job. The contemporary education based on traditional curriculum weighted with academic or cultural content is hardly the means to fit person into places in the modern work force. Training, which is regarded as an addition to education, is needed to prepare persons for the different occupational levels. The essential purpose of training should primarily be-to increase the work efficiency, to improve the conditions of the individuals may increase their earnings and improve their job status. Education, in its liberal sense, is a humanizing process. Training in its utilitarian sense, is a career building process. Education is a face-to-face instructional activity mostly carried out within the precincts of an educational institution. On the other hand, training constitutes a out-of-the class activity mostly carried out in work places. Systematic training implies a concerted process directed towards conformity to the requirements of work places and conditioning the trainees to work culture and work discipline. Training presupposes a trainee. In short, training is a sort of super structure, to be built on the edifice of education preparatory to training. That way, there is innermost co-relation between education and training.

Educators and professional experts believe that a comprehensive process of occupational preparation should include both education and training. They argue, rightfully of course, that such a preparation will enable students to achieve their maximum in the knowledge, skills and behavioural accomplishments necessary for a successful satisfying life. To meet the requirements of good citizenship combined with efficient service in the context of the modern economy and technology, learning experience must be enlarged and enriched by supplementing in-class activities with out-of-the class experience.

A good system of preparing young people for a wide range of diverse vocations or occupations thus call for organized and co-ordinated efforts in integrating vocational education and training. The integrated process of education and training could be developed along four inter-related stages: (i) Academic education: (ii) pre-occupational education and training; (iii) In-plant or on-the-job training; and (iv) In-service training. These four stages should mean.....

ACADEMIC EDUCATION

(a) Theoretical knowledge-in terms of definitions, basic principles and fundamentals, descriptions and applications-about subject-matter related specifically to the work the student should perform in the shop/laboratory/field during a given educational period.

(b) The knowledge of the necessary elements of maths, science and similar educational subjects in the general and applied fields to the extent it is considered essential to the career field the student is preparing to enter.

PRE-OCCUPATIONAL TRAINING

(a) The knowledge of materials, tools and tech niques, operations of specific pieces of equipment, safe work practices and procedures, work standards, and the application of technical information in the practical solution of problems typical to the career fields the student is preparing to enter.

(b) The knowledge providing information about the broader occupation field, current development in the field, work habits and relations and other related information, if any.

(c) Practical, shop and laboratory skill development training related to trades or occupations, communication skill development training, and other related skill development training, if any.

IN-PLANT OR ON-THE-JOB- TRAINING

This kind of job entry training should be aimed at exposing the trainee to the actual working methods and techniques related to occupational tasks. The training process should be directed towards acquisition of manipulative skills, occupational competencies and work culture and work discipline groundings.

IN-SERVICE TRAINING

This kink of occupational training be directed towards upgrading knowledge, skills and competencies of skilled workers so organized that they may advance up the ladder of job hierarchy while in service as and when the opportunity may arise. This extended system of occupational training should also correspond to career-long further training and retraining in specialized occupational areas.

For the first two stages of occupational preparation, the major responsibility must belong to institutions catering to vocational education and training. For stages three and four, the responsibility for accomplishing the training tasks is best discharged by employing organization.

Institutions can at best turn out readily trainable but not fully trained skilled personnel. The training at the institution level can be feasible only in the areas of basic skill related to trades or occupational, practical training in some manipulative skills and some degree or conceptual skills commensurate with the theoretical topics of the course concerned. Training specific to particular occupations can best be imparted at the beginning of and during employment, or preferably after a further definite occupational responsibility.

The training system should thus be conceived as an integrated process-which may take place partly in institutions and partly in work places, the two parts matched closely. In the final analysis, the most effective training programmes are those that lead to real jobs; which should mean organizations should train persons to meet their genuine needs. In a wider sense, training must be viewed as 'post-institution' investment leading to increased production and better productivity. Viewed purely from the economic point of view, training is a cost of production of labour.

LEVELS OF INDUSTRIAL WORK FORCE

There are recognized levels of industrial work force. The technologist, the technician and the skilled worker or craftsman make up the 'production team' that produces the goods and services that are the foundation of the nation's industrial economy. There is not always a distinct separation between the three levels. Some overlapping in the job requirements and responsibilities is there. However, this classification of trained technical humanpower spectrum has been generally accepted in our country.

The technologist or engineer holds a degree or equivalent qualification in technology or engineering. His work functions and responsibilities relate to management, execution, research and development activities.

The technician is a person qualified by education usually in a technical institution like polytechnic or by training under operating conditions in well -established training organization within industry. The technician holds the intermediated position between the technologist on the one hand and the skilled workers on the other. The technician's work functions and responsibilities relate to activities like construction, fabrication, production, maintenance, testing, operation, installation, drafting and estimating, and so forth.

The craftsman or skilled worker is one who has completed training in a vocational institute or has completed apprenticeship programme in a trade or is engaged in a vocation in which vocational knowledge, skills and competencies are acquired. I.T.I. trained personnel and National Apprenticeship Certificate holders belong to this category. I.T.Is. Provide vocational education and training with knowledge and skills in occupational trades, mostly of industrial nature, leading to vocational careers. Training of this kind prepares skilled workers needed for plants, factories and industrial establishments. This training system represents a transition from general secondary education to vocational education leading to employability for current, new and emerging occupations.

The growth and diversity of industry and advances in science and technology have led to ever-increasing demand of skilled craftsman. With on-the-job training and experience, and with further education and training when availed of, such qualified craftsmen will have ample opportunities for stepping up the ladder of job hierarchy to advanced technical positions as shop-floor supervisors or foremen or middle-level technicians. Several industrial organizations, both large and medium, provide some kind of training for their employees. The training-in-industry programme includes job training, extension programmes training and supervisory training. Such programmes in which both labour and management participate, can provide much needed training for a sizeable section of the skilled work force.

In the industrial sector job hierarchy, this chain of skilled and trained technical human power occupies the central or commanding position at the level of managerial, technological and engineering skills. They are the personnel who plan, organize, control and supervise process and operations and undergo activities with job functions appropriate to the position they hold in organization.

Below the level of skilled workers, there exists another class of workers or tradesmen. They are referred to as semi-skilled and un-skilled workers. An un-skilled worker is one who performs work that chiefly requires muscular energy and very little judgment. Semi-skilled workers may be classified somewhere din between skilled and un-skilled workers. Semi-skilled workers have some knowledge, experience or hand skills with abilities to work as craftsmen, artisans or handymen, Carpenters, smiths, fitlers, painters, weavers, workers, masons, plumbers, tanners are some such semi-skilled workers that form the work force at the lower rungs of production, manufacturing, constructions, operational or maintenance processes underlying mostly middle-scale and small-scale industrial organizations and government establishments. They are the personnel who have to their credit some degree or experience of skills acquired either through the traditional father-to-son apprenticeship practice or by undergoing vocational or occupational education or training in institutions or places of work.

Semi-skilled workers form a recognizable segment of work force in industrial establishments that help restore balance in the demand-supply relationship underlying skilled workers. Through the process of further education or training in vocational institutions or apprenticeship at the shop-floor level, semi-skilled personnel tend to qualify to attain the accepted standards of skill and ability appropriate to skilled operations. Vocational and technical institutions catering levels of course organization provides the necessary facilities for training of semi-skilled workers and handymen. Such a training system, when properly planned and organized at the state

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level, tends to supplement the I.T.I. system of training in a large measure. Though the training given in trade certificate level institutions cannot be rated as terminal in character, the end-product may be recognized as trained in semi-skills, which can be up-graded in content and depth by organizing programmes of further or extension education and training in the context of the current industrial development and needs. To that end, the State level vocational institutions, other than I.T.Is, have an important role to play.

SHIFTING STRUCTURE OF INDUSTRIAL WORK PLACE

During the past thirty years the course of industrial development in our country has been marked by a massive increase in the size of production units and the corresponding quality production; by the steady introduction of sophisticated machinery and process; by diversifying the industrial production; and by divisioning and sub-divisioning of labour processes. These developments have given rise to a new order of industrial work place, a phenomenon of changing nature of industrialization. As a result, modern industrial requirement in terms of work force are now cast in an altogether different mould. A major aim of the efficiency movement in modern industry is to facilitate the greatest productivity with the least expenditure on humanpower and other resources. Industrial and business leaders therefore look to the school or institution to develop a new type of student or trainee with behavioural pattern necessary for the modern age. A well-trained and adaptable worker conscious of obligations and efficiency, a better citizen – is the modern requirement.

As a consequences, jobs are becoming highly specialized and standardized, especially in corporate organizations. Divisioning and sub-divisioning of labour process is the order of the day. The diversity of industry's work force with its various levels of hierarchy require different types to workers-with different personality structure with different levels of intelligence and initiative, and with different levels of skill and competence. New jobs arising in the emerging high-tech economy require skills that many workers simply do not possess.

Requirements for the new emerging jobs are spelled out not in terms off knowledge and skills nut in terms of bebavioural pattern-habits, values and personality traits conducive to assembly line techniques and turn-key industrial processes. In the modern setting, this specialization of work force means requirement of less craft or skill and requirement of more culture of work. Order, regularly, punctuality, rationality, adherence to work techniques and schedules, the ability to co-operate with co-workers-are the important attributes of work culture.

At the same time, processes and methods of industries have become increasingly more depended on the principles of modern science and technology. More and more jobs emphasize on the need of sophisticated knowledge and skill on the part of the skilled worker in areas like ideas of materials, ideas of organization, ideas of costs, and so on. Corporate leaders emphasize the necessity for a new stress on far more maths, science, technology and basic skills. Workers in a rapidly changing labour market will need to be generalists, adaptable enough to change courses and change for new careers with a minimum of disruption.

In today's industrial environment, the emphasis is on two categories of work force: a sizeable number of workers which need skill, competence and work culture attributes; and a comparatively large number of workers which need skill only in a narrow range of operations. This should mean evolving programmes education and training with two broad complementary objectives – programmes designed to fit the students or trainees with functional specialities would contribute to their usefulness and thus to their integration into the emerging work culture; and programmes designed to fit the students or trainees with skill and competence commensurate with the job tasks. This should also mean that the traditional curriculum will have to give way to a new dispensation with a mix of knowledge, skill, competence and work culture. Perhaps it may be appropriate to evolves specific programmes of training and retraining for the emerging urban working class.

NEEDS AND DEMANDS

Each society needs a certain number of educated citizens, more or less specially qualified, at the desired levels of educational attainment. Ordinarily, this need stems in the first place from the national economy, but it may also be generated by other sources, including the state itself, which has to plan and implement policies and programmes leading to humanpower development and utilization.

Before commenting on the supply-demand relationship related to skilled workers, it will be worthwhile to refer to the relationship between needs and demands in generalized terms.

First, the co-relation between needs and demands is not always harmonious. Second, in many cases needs precede and exceed demands. But in many others, demands are greater than needs. Third, in many sectors of employment needs and demands fail to coincide. This is more marked when educational systems and economic fluctuations do not match. Fourth, educational needs and demands are both increasing enormously. Among the multiple causes for this kind of expansion are population growth, economic development, increase in knowledge and skills, social transformations and political motivations.

This general analysis apart, expanding economies need ever-large number of skilled workers. Technological advances and changes transform traditional occupations or create entirely new job categories requiring training and retraining on a large scale. New thrusts of a country pre-suppose parallel effort in preparing persons to man the emerging of new demands from hitherto stagnant, traditional rural economies. This leads to pressure for education from parents and young people, especially from the disadvantage and under-privileged classes hitherto more or less excluded from organized education. The fact today amply demonstrate that the requirements of development and the opportunity of new employment possibilities act as a strong stimulus to the expansion of occupational education and training.

It is quite rational to understand that the growth in the demand of vocational education and training should be fundamentally determined by the needs of economic development. The law of supply and demand of the labour market, conditioning the preparation of qualified skilled workers in accord with skilled humanpower forecast and economic development plans, should hold good all times. Yet the fact remains that the present-day socioeconomic forces and compulsions tend constantly to require the education system to operate in advance of real employment outlets . Above all, parents generally do not agree their children being deprived of the education relevant to the modern thrusts of capacity for absorbing them in gainful employment. "The combination of such needs and interest accounts for the unprecedented pressure of the demand for education at all levels and in all forms'-as rightly analysed in 'Learning to Be", UNESCO. This and other concerns stemming from various socio-economic and political considerations, pushing educational development.

Humanpower data available provides little guidance on the extent of vocationalisation of education at the secondary school stage level. Humanpower needs are generally successfully competing courses of general education. Student population in terms of products of vocational or technical schools or center, craft-training institutes-are not represented in the work force studies and forecasts. Thus there is inadequacy of the available data about vocational or occupational education. Also very little is known about the size of the potential market for trained skilled personnel or the costs and benefits to the individuals and the society of this important part of the country's total education provision. The lack of data and studies add to the already difficult task of planning effective courses of vocational education for the future.

When the propose and plan of expanding the existing programmes, we should also think of the manner in which the already trained humanpower is put to use. The available statistical data point to the fact that a fair proportion of our skilled personnel is being under-utilized, and in some cases, it is unutilized.

The need to pay due attention to the proper relationship between supply and demand in terms of skilled work force has to be understood in the context of stringency of our financial and physical resources. If the country or state is to achieve its targets economic growth, it must have adequate supply of skilled hands of reach category of jobs to be performed. On the other hands, if there is a sufficient of trained surfeit of trained persons in any job category, it implies waste of scarce resources and organizational efforts. It also adds to the difficult problems of unemployment and the resulting frustration to the educated youth. It has to be reasonably assured that educated and trained skilled persons will not remain unemployed or wastefully under-employed.

STATUS AND VALUE OF VOCATIONAL EDUCATION

Indian education is essentially centred on one basic purpose- to prepare the student for subsequent education. Far too meager attention is given to the role of the school or college in preparing students for active citizenship and for employability skills. There is a general notion that preparation for a life career is a second-class activity for second class citizens. This attitude is shared by businessmen, political leaders, labour leaders, educators, administrators, parents and students. Unfortunately, this attitude infest far Central and State governments too-which invest far more on general education than they do support of vocational and professional education. There is no Central act on vocational education, nor there is any Central funding arrangement operating all over the country. What are the consequences of this attitude? Well, they are:

- At the secondary stage, the enrolment in vocational education is very low. It was just 22 per cent of the total school enrolment in 1986, as per the Education Commission's observation. There is no evidence to show any improvement thereafter;
- Good students shy away from vocational education. Students who opt for vocational education are mostly the drop-outs and cast-offs of the academic stream;
- Teachers and instructors engaged in vocational education enjoy relatively low status or prestige within the teaching profession. Good teachers and instructors are thus seldom at tracted to join the vocational streams;
- Facilities for instruction are inadequate both in terms of quality and quantity;
- Courses or programmes offered are far out of context with the realities and needs;
- Achievements in academic subjects far out weigh achievements in vocational subjects. The two parts are usually taught with no relevance to each other. Generally vocational subject are labeled as "of lower quality", partly because of lower quality of students and partly because of a perverted definition of "vocational subject".

Even the Kothari Education Commission was compelled to make unpleasant comments on the status and value of vocational education. The Commission observed that despite repeated exhortation it is unfortunately still felt that vocational education at the school level is an inferior form of education, fit only for those who fail in general education-the last choice of parents and students.

This attitude must change. At all levels of thinking-national, regional or state-the fact must be recognized that in an increasingly technological era, occupational education and skill development are the keys to a long-range solution, both for the individual and society. Helping young people become employable is an essential national objective.

A concerted effort is therefore needed by government agencies, industrial and business organisations, social and political bodies and all groups and individuals deeply concerned with land interested in vocational education-through enlightened wage policies, improved, means and methods of educational organization, organized vocational guidance and counseling services, the creation of public opinion-to promote the status and value of vocational education.

Unemployment is more often the result of a lack of proper education and skill acquisition rather than of a shortage of job opportunities. We must, in one way or another, see that our education system prepares boys and girls to use their minds as well as muscles for talks that today's and -tomorrow's -labour market requires. Vocational education provides the diversity and practicability that our education system lacks so much. An efficient work force is the country's best resource-and vocational education is the best guarantee to workers that they will always be qualified for a job.

EDUCATION OF EDUCATIONAL OPPORTUNITY

The modern trend is towards universalisation or democratization of education and imparting it to every citizen irrespective of his ability, attitude and social environment. This is made possible through providing wide options to the students in the selection of subjects including languages, sciences, industrial, agricultural and commercial skills, fine arts, crafts, etc. Admission regulations are made flexible and academic deficiencies, if any, are allowed to be make good en route. Remedial measures and facilities are offered liberally. Conduct of examinations is carried out on widely differing patterns for different categories of students. Further education is provided extensively. These principles of equality and social justice practiced in some developed countries like U.K., U.S.A., Japan and Germany, are based on the emphasis that opportunities for education should be made available to every person whatever his status in the society or his academic caliber or ability.

A very important point of view with reference to democracy in education is that modern society requires equality of opportunity for obtaining vocational or occupational education on as extensive a basis as possible. Granted that individuals differ in needs, interests and abilities and that no one type or kind of educational programme is suitable to the needs and capabilities of all persons; yet it would seem more in the spirit of democracy to provide opportunities for many types and kinds of workers to opt for a variety of courses and activities rather than to limit these opportunities to the few who are preparing to enter the vocations or professions.

Our education system has unwittingly created social barriers which militate against the principle of equalization. In our country, the education of an average student in respect of vocational or technical careers stands neglected. It is this kind of young persons-who would make the rank and file of work force in several fields of employment -that hardly receive the relevant occupational education or training to help them discharge their functions with some degree of efficiency. This imbalance can be overcome by enlarging and modernizing the system of vocational education, by dispersing the institutional facilities as widely as feasible, by offering a variety of programmes of education and training to meet the needs and interests and individuals, and by providing other built-in features in the course organization so as to provide facilities that may be availed of as freely and on as wide as basis as possible.

CONSTRAINTS, PRIORITIES AND OPTIMIZATION

The effort required to pay adequate attention to the proper relationship between needs and demands has to be understood in the context of constraints of our financial and physical resources. Education and training of the number of skilled workers required at different levels of occupations may entail expenditure of an order which the national or state economy may not afford. In planning and formulating vocational education and training programmes, it is imperative to take into account the resources available and the capacity of the administration to provide the necessary finances and other facilities needed. There are to face other constraints that limit expansion and modernization in the field of vocational-technical education. Availability of-competent qualified teachers and instructors; shop and laboratory equipment of the right type and quality; the facility of training and retraining of teachers and instructors; teaching aids and equipment; instructional materials like text books, reference books, books of programmes instruction, instructional manuals and work books; proper organization for testing student performance; vocational guidance and counseling service; financial and other aids to students-are the major constraints. There are often overcome by lowering the standards and norms. Diluting standards and norms leads to ineffectiveness of the education and training programmes.

There are internal constraints of this kind in every educational system which limit generating of additional facilities needed for expanding or modernizing education. This is all the more so in the case of vocational-technical system of education which is cot-intensive compared to any general education system at the school stage. In such a situation two alternatives come to mind as a matter of solution. When the total cost of proposals goes beyond the finances available, priorities will have to be determined and enforced by the administration. Alternately, it may become necessary to place a much greater emphasis in our plans for expansion and modernization on the basis of intensive utilization of the available facilities. It is generally agreed that the existing institutional facilities in terms of space, plant and equipment, under-utilised teaching and instructional staff must be put to their optimum use. Optimization of facilities can also be thought of in terms of lengthening working days, making full use of the ling vacations, organizing two-shift working, organizing part-time route/ corresponding courses, and generally by creating an environment of hard sustained work.

QUESTION TO BE ANSWERED

We have discussed in generalized terms some important issues, purposes and principles that affect the planning and operation of the vocational education system in our country. There are yet many other questions as :

- What shall be the philosophy and objectives governing vocational education?
- For what fields or occupational areas vocational education be designed and orgainsed?
- For whom vocational education is intended?
- What shall be the awards? What shall be the levels and values of the awards?
- What shall be the routes of vocational education?
- What shall be the nature, contents and depth of the curricula for vocational courses?
- How and to what extent shall vocational education be oriented to actual practices or career situations?
- What kind of learning experiences shall be included in vocational education?
- How and to what extent vocational education be integrated with general education?
- What shall be the key person or agencies for designing and formulating the curricula?
- What shall be the standards and norms and how shall they be established and maintained?
- What instructional methods and techniques shall be developed and used?
- How shall the student performance be tested?
- How shall working co-operation between in stitutions and employing organizations be established and maintained?

- Who shall administer and operate vocational education programmes?
- What shall be the type of organization? What shall be the character of institutions?
- What shall be the essential facilities and services for establishing and maintaining programmes of instruction?
- Who shall pay for vocational education? What shall be the system for funding and financial aids?

Acceptable answers to questions such as those raised above involve a detailed study and analysis of many concept, principles, facts and practices in vocational education. The key persons and agencies primarily concerned with the process and procedures of designing vocational education courses are expected to address themselves to the issues and questions raised here, and to decide whether to accept the presented premises and analysis, to work for reforms, to bring about the significant changes and modernization in the field of vocational education. Studies like this should not be accepted as the final answer about the present. They should, ideally, only raise issues and questions about it.

It is hoped that the exposition, perceptions and arguments presented in this book may serve a means of evaluating the purpose and scope of the existing programmes of vocational education, and may also serve as a guide in arriving at decisions concerning expansion and modernization of vocational education.

Chapter- 2

Vocational Education Training

There are three categories of centrally planned and structured training programme: (1) Craftsmen Training Programmes; (2) Apprenticeship Training Programmes; and (3) Advanced Vocational Training Programme.

CRAFTSMEN TRAINING PROGRAMMES

Under this scheme, training is provided in 32 engineering trades and 23 non-engineering trades in 830 Industrial Training Institutes (I.T.Is.) and Centres throughout the country, The institutions are affiliated to the National Council for Vocational Training (N.C.V.T.) the total number of seats available for training are 1,91,664. The period of training varies from one year to two years. The minimum educational qualification to pass in matriculation or equivalent. N.C.V.T. Awards certificates to trainees after they complete the course successfully. The courses are organized at the state level in accordance with the curricula, norms and standards prescribed by the National Council for Vocational Training.

APPRENTICESHIP TRAINING PROGRAMMES

Under the Apprentices Act of 1961, the employers covered under the Act are obliged to take a certain number of apprentices as per the specified ratio and provide training facilities in accordance with the prescribed curricular in various designated trades. There are 136 designated trades 217 industries of various categories have been specified to train apprentices, the number of apprentices undergoing training varies from a pass in Std. V to H.S.C. At the end of training, the apprentices are trade tested by N.C.V.T. and those successful are awarded the National Apprenticeship Certificate (N.A.C). Both these awards are recognized as National Certificate awards, N.A.C. being a higher level award.

ADVANCED VOCATIONAL TRAINING PROGRAMMES

These programmes were introduced in 1977 by central and State Government in collaboration with the United Nations Development Programmes and the International Labour Organisation. They have been structured to meet the demands of highly skilled personnel for the modern industry. The advanced training given extends beyond the range attainable under Craftsmen Training and Apprenticeship Training programmes. The scheme has been introduced in the Central Training Institutes (C.T.Is) , Advanced Training Institutes and selected I.T.I. in various States.

STATE LEVEL CERTIFICATE PROGRAMMES

Certificate Level course of varying types are conducted in States and Union Territories. They are conducted in several types of institutions depending upon the nature and contents of courses and the organization structures as determined and operated by the administrations concerned. Administered by State and Union

Territories, they are governed by regulations, norms and standards set by the individual administrative units or agencies. As such, the programmes suffer from lack of uniformity and quality of instruction.

The available information and data in respect of certificate courses are not up-to-date of accurate enough to present a true picture of national educational conducted in institutions at the level of States and Union Territories. Courses duration varies from six months to two years.

This kind of vocational education is basically organized for preparing semi-skilled craftsman, operators and other workers needed for occupations requiring knowledge and skills of an order next below that for skilled workers.

Semi-skilled personnel prepared in this manner can reach the next higher stage through the process of further education and /or training in institutions for in places for work.

HIGH SCHOOL LEVEL VOCATIONAL COURSES

Facilities exists in Technical High Schools, Multi-Purpose High Schools, Post-Basic Schools, Agricultural High Schools and Junior Technical Schools for education in technical and vocational subjects along with general academic subjects. These schools or centers prepare students for courses leading to S.S.C. examination conducted by the respective State Boards. the duration of education in technical and vocational subjects in mostly three years. The vocational or technical bias is limited in scope and application. Such schools are dual-purpose institutions - with higher education preparatory and vocational objectives. Vocationalisation is not of such an order as to "the training as terminal However, vocational treatment can be rated as the work experience at its best.

Through not organized on the lines of the comprehensive or common system of school education as in U.S.A , U.K. , Germany and Japan, such institutions do symbolize the principle that vocational educational education should not be considered as an entity by itself but as an integral part of the total education process. We need more institutions of this kind in the country, as rightly stressed by the Kothari Commission.

HIGHER SECONDARY LEVEL VOCATIONAL COURSES

So far, West Bengal, Karntaka, Gujarat, Andhra Pradesh, Maharashtra and Union Territories of Delhi and Pondicherry have implemented the scheme of vocationalisation at +2 stage of d10+2+3 education system. There are differences in the organization pattern from state to state. However, Karnataka, Delhi and Gujarat, more or less have followed the pattern suggested under the National Document prepared by the National Council for Educational Research and Training.

Most of these courses comprise of general education subject with vocational education subjects as a bias. They are not terminal in character. There are not adequate provisions for making instruction practical and effective. Vocational subjects are confined to (1) Agriculture and related vocations; (b) business and office managements; (c) technical areas; and (d) other general services. The duration is generally of two years. Courses of one year duration are also organized in some state.

The Vocationalisation of education at +2 stage is not catchin up as fast as envisaged by the Kothari Commission because-

Very little attention seems to have been paid by the state administrations in promoting and organizing vocational courses on right lines.

The courses structures framed are not flexible enough to allow students to prepare for entrance to first agree classes in colleges or universities or to polytechnics.

The curricula are not designed to make the courses practice-oriented keeping in view the needs of employment market.

PROTO-TYPE TRAINING PROGRAMMES

Proto-type training centers are established at Rajkot, Delhi, Calcutta and Madras in collaboration with foreign agencies. The centers have facilities for the training or youth as well as adult, who desire to develop their knowledge, skills and competences in certain vocational or occupational areas. The centers are under the administrative control of the Central Government. The courses are of one to two years duration. The programme are limited in scope and application.

VOCATIONAL EDUCATION PROGRAMMES FOR ADULTS

The following programmes are offered with a view to developing occupational knowledge of adults working in industry;

Worker education programmes sponsored by Central Government. The training helps workers to create a co-operative environment in industry, increase productivity and educate in union activities in general.

Programmes sponsored at the State level for imparting knowledge to workers in respect of industrial occupations. Such instructions are generally offered on part-time basis.

Programmes organized by local Productivity Councils for workers, specially with the purpose of developing knowledge in the specific fields of occupation of specializations.

Career development programmes, sponsored by organized at state level, to provide opportunities for developing employable knowledge and skills. Such programmes are mostly organized for education unemployed or under-employed persons.

TRAINING-IN-INDUSTRY PROGRAMMES

A number of industrial and business organizations, large and medium, provide organized training for their employees. The type of training varies depending upon the organization and its needs. The training may be of the informal learning type of the type of organized instructional programme within the plant under the supervision of the personnel department or of a special education and training division. As a general rule, the training is confined to the acquisition of occupational knowledge and competences needed to increase productivity in the occupation concerned. Some programmes cater to providing related information and some instruction of a general education nature. Some are designed to train and retrain employees in specialized areas of occupations. The programmes include apprenticeship and pre-service job training, on-the-job training and supervisory training. A good proportion of the present work force is trained as skilled workers, operators and technicians through the system of training-in-industry. Thought limited in scope and application, the training systems can provide much needed occupational knowledge and skills extending beyond the normal institutional system of vocational education and training.

STAFF TRAINING PROGRAMMES

The following programmes are offered for staff training in our country:

CRAFT INSTRUCTOR TRAINING PROGRAMMES

For training craft instructors, six Central Training Institute (C.T.Is.) are established at Mumbai, Calcutta, Chennai, Hyderabad, Kanpur and Ludhiana. These C.T.Is. provide instruction to the instructors working in I.T.Is. and Apprentice Training establishments. They offer a range of one year cources which provide training both in skill development and principles of teaching. Refresher courses are also conducted.

FOREMEN TRAINING PROGRAMMES

Foremen Training Institute at Bangalore provides training for existing potential shop foremen in technical and managerial skills. The courses are long term as well as short-term types. The institute also conducts in-service tailor-made programmes to meet the needs of particular establishments.

EXECUTIVE TRAINING PROGRAMMES

Central Staff Training And Research Institute has been established at Calcutta for conducting training programmes of officers and staff of the Central and State Governments as well as of industrial organizations. the training is provided for persons who are directly engaged in training activities development and research in the field of vocational training.

GENERAL COMMENTS

The introduction of practical subjects in secondary schools so as to divert them into difference walks of life was first recommended, as far back as in 1882, by the Indian Education Commission; but little or no effective action was taken to implement the recommendations, and even to-day the enrolment in vocational courses at the secondary stage is only 9 per cent of the total enrolment, which is among the lowest in the world" - succinctly observed the Kothari Education Commission in its report. The state of affairs in 1984 may be somewhat better than in 1966, yet far short of the targets and achievements envisaged under the Commission's recommendations. The Commission emphasized the need to vocationalised higher secondary education (10+2) stage) and to expand vocational courses to cover about half of the total enrolment at this stage. The Commission also recommended that a large number of terminal courses should be organized varying in duration from one to three year.

The Commission suggested the target of 50 per cent in the context of the prevailing condition of economic growth and development and in consonance with its perception of lessening pressure on the university education system through the strategy of vocationalisation of higher secondary education progressively. This contentious proposition notwithstanding no significant progress has been made in the direction of introducing and developing post-matriculation programmes of vocational educational and training of various kinds and types in tune with the economic and social trends affecting the people.

The authorities and agencies concerned with education in general and vocational educational in particular, both at the Central and State levels, are also not satisfied with the present state of affairs, especialiy in respect of vocationalisation of higher secondary education. The reports of two Central Committee-namely, NCERT Committee and Adiseshiah Review Committee threw much light on the issues and problems facing the introduction of vocational courses at the 10+2 stage of secondary education. The general observations and recommendations are:

By and large, the stages have not followed the guidelines of the National Document in respect of vocationalisation of higher secondary education; the objectives of linking education with productivity and manpower requirement were completely ignored by the stages; each state seems to have its own brand of vocationalisation; absence of effort to plan for further education and training allowing students of vocational stream to update and upgrade knowledge and skills; vocational surveys of areas should be undertaken before the programmes are launched; there should not be rigid streaming of courses; the duration of vocational courses should normally be of two years; pre-service and in-service education for vocational teachers should be organized; vocationalised higher secondary education must be distinguished from technical/professional educational imparted in polytechnics where certain levels of knowledge and skills as technician are aimed at the attained and is, thus, education in the broader sense of the term.

The position in respect of state-sponsored and organized vocational education courses, known as certificate courses, the awards of which are conferred by agencies of bodies established and controlled by the respective state administration, does not reflect a satisfying picture. These state-managed courses are basically devised and operated for students pursing school education as well as for those who semiskilled jobs mostly, and for skilled jobs to some extent. They are also organized to meet the needs of young persons and adults inclined in take to self-employment. However, by and large, their structures, contents and awards do not fit into any recognized pattern on all-India basis. That apart, they are not organized and administered on the basis of a unified system of education within the states themselves. The problem is compounded because of absence of integration and co-ordination between several government department and agencies administering multi-pattern, multi-level vocational education programmes with conflict award values. As a consequence, uniformity and standardization in such matters as administrative control, educational norms and standards, grant-in-aid examinations and awards - are not there in the system. Furthermore, the institutional instruction suffers from inadequate financial and physical support, out-dated and ineffective curriculum and sub-standard instructional methodology.

Undoubtedly for a country of India's size and diversity, it may not be feasible to have near identity of uniformity in matter underlying education system, particularly when education is the responsibility of the state government. And yet from the objective of brining about a modicum of reasonable uniformity in aspects such as quality of instruction and award and attainment of standards in the face of problems of inter-region and interstate migration and recognition of awards, the time has come to review the present position and evolve and acceptable co-ordination framework of policies and strategies governing certificate type of vocational education within the states without any further delay and all over the country in the near future. This must become a matter of serious concern of the Central and State Governments.

The Craftsmen Training Scheme (CTS) and the Apprentice Training Scheme (ATS) have also come in for criticism of late Syllabi and training contents do not meet the present day needs; equipment is either worn out of obsolete; inadequate staff acquisition and training; institutions not periodically evaluated; uncontrolled growth of ill-equipped privately manage institutions – these are the principal shortcomings and limitations of the CTS programmes to-day. A lot has been said about reforming the system. Recently, the Committee Experts, appointed by the Central Government on 25th April 1978, went into the full question of review the training programmes. The Committee has suggested a number of remedial measures for improving the quality of training and modernizing the system as a whole. Restructuring of I.T.I. courses in accordance with the Committee's recommendations is under process.

The Abdul Qadir Committee also examined in depth the quality of Apprenticeship Training. Among other things, the found satisfactory; (2) inadequate staff provided by establishments for organizing and regularly shop-floor training; (3) trainees are not rotated regularly regularly among the different production of workunits. The Committee recommended that the ratio of apprentices to workers must be considered as ceiling and the actual intake of apprentices in each establishment should depend on the skilled personnel required in the area concerned. The Committee, taking an enactment of a comprehensive Vocational Training Law to connected therewith. The Committee, accordingly, recommended the amending of the prepared a draft of the proposed law based on Committee's recommendation for circulation to eliciting concurrence of States and Union Territories. The fate of this move of the Central Government is not known. Perhaps the proposal may not be pursued consequent upon the Ministry of Education having already established the All-India Board of Vocational Education.

This Board is constituted to function under the aegis of All-India Council or Technical Education. It will thus be a non-statutory body just like any other government advisory or co-ordinating agency. This part, the Board's functioning is restricted in as much as it will evolve programmes of action on an all-India basis for vocational education after Std. X mostly. The range of operation of the Board is thus confined to an area of limited scope and application, and that too, without any mandatory power. Further the Board is not constituted on the lines proposed by the Abdul Qadir Committee. It should have been most appropriate to have moved for a comprehensive enactment embracing all major forms and patterns of vocational education and training considered as an integral part of skilled manpower development and training on an all - India basis.

There are several good models of public laws available for study and reference. Some of these laws and discussed in detail in Chapter 10 this book. It may not be an overstatement of emphasis here that the kind of growth and development that has marked the progress of vocational education and training system in countries like the U.K., and U.S.A., Germany, Japan, Ireland and Singapore is, not doubt because of the statutory provision embodied in laws enacted to provide full opportunities and facilities to people to pursue vocational education and training organized on a systematic uniform effective basis.

In the final analysis, the critical factors that have inhibited orderly growth and progress of vocational education and training programmes in our country remain to be.

Absence of clear understanding of the concepts, issues and purposes of vocational educational education and training.

Lack of commitment, creative thinking, interest and resourcefulness on the part of planners, administrators and educators concerned with vocational education and training.

Unawareness of an insensitivity to the changing needs of young people and adults in terms of opportunities and facilities where by young people and adults, if they so desire, learn that different crafts, trades and occupational knowledge and skills, and thereby fit themselves for better performance of life's duties.

Lack of national policy frame work to encourage, plan, establish, administer, regulate and keep under review a systematically organized and integrated and coordinated system of vocational education.and training.

Absence of a Central funding system for stimulating and assisting the States and Union Territories in making adequate provisions for the programmes.

Absence of a well-built system of further education for allowing students of vocational streams to continue their technical or professional education whenever they need it.

Absence of a comprehensive Central law containing provisions for the organization, administration, control and review of vocational education and training programmes on national, state and local levels.

Chapter-3

Imperatives of Vocational Education Initiatives

INTRODUCTION

Although the Youth Training Scheme (YTS) has been the spearhead of much of the employment-led rethinking of pre-vocational and vocational education, it was part of a larger and wider reappraisal. The more far-sighted, and not only among the vocational educators, had for decades recognised the inadequacies of provision and its increasing disjunction with the changing needs of young people and society at large. It was not only the Manpower Services Commission (MSC) which identified the need took action. Ideas and proposals for the reform of curricula and examinations for upper secondary and further education (FE) have been abundant. Likewise in the latter part of the compulsory period of schooling the vocational thrust has been a powerful force for change at the level of the school themselves.

Starting with the activities of the Further Education Unit (FEU), which has been the leader of the further education as distinct fro the industry employment wing of the reform movement, we consider next a series of initiatives and proposals for strengthening the vocational role of the school and further education systems. These and other development demonstrate the scale and diversity of activity proceeding under the banner of new vocationalism. Whether, taken together, they constitute the coherent and adequately comprehensive reform that is needed is, however, questionable. The outstanding, unresolved issue is the future of a system of secondary education, the pinnacle of which is the unreconstructed A level examination. The FESU brought considerable influence to bear on the new vocationalism, as the MSC freely acknowledged. Its ideas were, however, based on rather different presuppositons from those of the MSC. The FEU, established in 1977 by the secretary of State for Education and Science, was charged with the task of making possible a more co-ordinated and cohesive approach to curriculum development in further education. It soon began to publish documents designed to stimulate discussion and policy and to participate in a number of demonstration projects. Clearly identified with the established further education sector (schooling model), although lacking power or resources to commission pilot projects or national schemes on the scale needed, its impact on policy, strategic thinking and practice has been considerable.

In June 1979 the FEU published its influential and often reprinted report, A Basis for Choice. This seminal work surveyed the range of full-time pre-employment courses available for 16-plus pupils who were entering further education after leaving school but without specific vocational or academic commitments. The FEU concluded that the existing provision lacked both co-ordination and a nationally recognised framework, an observation which, while it caused to great surprise, was widely endorsed as highlighting a major weakness in the national system. In order to promote the nationalization and effectiveness of the numerous existing and proposed courses, the report recommended a unifying curriculum structure in the new form of a set of criteria which present and future schemes might satisfy. The objectives were defined as flexibility, transferability and currency, themes that were to recur throughout the 1980s. The real importance of A Basis for Choice is that, in quite simple terms, it provided policy-makers and practitioners alike with a clear sense of the directions that should be pursued to overcome the widely agreed deficiencies.

Many of the ideas it advanced were taken up in the design of the YTS. Its weakness, or rather that of the system of which it was a part, lay in the inadequate policy and power structure for effective decision-making in post-16 education in Britain.

The schemes envisaged by the FEU were, like the YTS, intended for a wide range of ability but the FEU had in mind a distinct, school/college-based target group. It recommended provision.

> for young people who enter further education after leaving school and who something other than CCE studies or programmes preparing them for specific occupations. These mainly one-year courses are intended for young people of averageability and attainment who may be vocational uncommitted at the start but who wish to develop an informed orientation while keeping their employment and further education options open.

The FEU astutely pointed straight towards one of the principal weaknesses in national policy and provision. This target group might be thought of as a parallel to the YTS trainees, but with this major difference: that they could continue a form of general education, within the environment of the formal education institution. These were among the students the authors of the Newsom Report, Half Our Future, had in mind when, in the 1960s, the effects of longer period of full-time schooling for all were being debated nationally. They were to be the target the numerous proposals and initiatives to reform the middle and upper years of secondary schooling and curriculum and assessment procedures for use by school and college.

One purpose of the proposed new course was to offer provision positively designed for the needs of the target group. The authors of A Basis of Choice drew attention to the number of post-16 one-year O level courses which, in spite of an apparently high failure rate, continued to attract pupils without a definite job or job destination, presumable because of the perceived usefulness or 'currency of the General Certificate of Education (GEC). While the then prospective substitution of the General Certificate of Secondary Education (GESE) for the GCE promised to reduce wastage in the form of outright failure, it was seen as likely to render one year repeat courses an even less fulfilling activity. As Pauline Green put it in 'A new curriculum...., the concept of a new course could be

> seen as an exciting opportunity to provide educationally worthwhile experiences of students informs expressly designed to meet their needs, rather than:
>
> their repeating earlier 'failure' (re-take CSEs)

- attempting academic unsuitable courses which had never been designed for 'them' (O level) or:
- being 'dumped' into low-level unrespected courses which delimited future opportunities.

The FEU report does not, in any global way, examine an age group, or deal with national provision. It puts under a microscope the existing arrangements for a defined clientele - that is, non-specific vocational preparation for 16-plus students with limited but varying academic success and inclination. This is a clientele that has always fallen into the interstices between the categories and differentiated schemes that have formed the staple of national policy and provision. A merit of the FEU thinking is the recognition of a specific target group whose needs command attention by virtue of past failures of policy and yet can be clearly addressed. By way of caution, however, it should be recalled that the aim of the post-Second-World-War reforms in implementing the 1944 Act was to provide, through separate secondary modern and technical schools, an alternative of equal value to the grammar schools. Eventually, this system of separate and supposedly equal strands was abandoned in favour of comprehensive schools. We have already said, but it bears repeating in this context, that one of the crucial, unresolved issues in the 16-plus debate is the quality and acceptability of the several alternatives now offered to those not proceeding through the GESE to A levels. Due in very large part to the legacy of separate elements and the status monopoly enjoyed by an A level system which is quite explicitly tailored to meet the needs of a small minority, Britain as yet lacks a coherent framework of education for those aged 16 and over. Especially in relation to the A level issue, policy, while clear enough, is inadequate in relation to requirements for the majority.

To return to the endeavour of the FEU, we can, with them, acknowledge the undersirability of simply adding to a plethora of existing courses. The FEU objective has been to substitute something more useful (functional) in the eyes of students, parents and employers. In view of this objective it was necessary to provide a balance between something general (because uncommitted to a vocation) and something regarded as useful in a future job; and between something nationally recognisable as a qualification and locally appropriate, and which took into account labour market characteristics. This sensible approach required a combination of national criteria and local flexibility, to easy in practice to achieve. Most important for the longer term, the FEU , unlike the MSC, accepted that the existing structure of further education institutions should be the starting point and provide the framework for action. This is a fundamental point. The MSC in advancing the YTS , started with a deficiency model - deficient content and pedagogy, deficient structures - and sought to remedy both setting up its own, new programmes which would be (largely) independent of the existing school/college system. The FEU, however, took as its starting point the experience and potential of the existing system and argued for evolutionary change with that system as the base of operations. Acknowledging its limitations and defects, the FEU nevertheless has consistently taken the view that reform from within was the more desirable course to follow.

In many ways, the FEU's assumptions were realistic and cost effective, and better grounded in the deep structure of assumptions about what is appropriate provision, than the grand strategy of the MSC. On the other hand, without that grand strategy, neither the penetrating critique nor the necessary mobilisation of resources that have characterized the new vocaltionalism would have occurred.

In the FEU proposals, colleges would determine the curriculum on a local basis with the help of agencies such as the Career Service, MSC Area Boards and local education authorities. The need for focus would be met by a common area of studies, to be too job-specific would be inappropriate, so various combinations of common core, vocational and optional studies would be made available. They could be achieved is a number of ways. Colleges might group courses around their existing departments such as 'hotel and catering', 'building and construction' or 'the caring professions'; or around groupings of skills cutting across these divisions; or around local industries.

While the FEU was not concerned with a fullblown national plan, it stressed the advantages to be gained from rationalisation of courses and in particular from national validation. Mention was made of the argument contained in the report by Garnett College, One Year Pre-employment Courses for Students Aged 16-Plus: a Survey of Provision in College of Further Education, that the proliferation of courses is one of the major factors working against their recognition and perceived usefulness to students. Emphasis was to be placed upon assessment and the provision of a nationally recognised award available to student who successfully complete a validated course. This is a sign of the spread of the determination, already discernible in the MSC and the Department of Education and Science (DES), for clarification, rationalisation, which appears to be an essential feature of the new vocationalism. The important issue, still unresolved is whether this will result unsterile tidying up, a further large concentration of power at the national level, or in increasing recognition and currency for a range of useful qualifications.

THE QUEST FOR NEW 16-PLUS QUALIFICATIONS

This is not the place to recount the long, frustrating and still in conclusive saga of proposals and attempted reform of curricula and examinations for 16-to 18/19-years-old remaining in full- or part-time school or college education. There have been many studies of and commentaries on this unedifying episode of contemporary educational history. The continued dominance of the GEC A level examinations, designed for a small minority of the age group and gened towards the single subject and joint honours degree programmes of the British universities, have been one factor but not the only one, militating against a fundamental restructuring. The School Council for Curriculum and Examinations, the Committee of Vice-chancellors and Principles, the DES and the examining bodies have been among those essaying major reforms. The successful combination, at 16-plus, of the previously separate routes of GCE O levels and Certificate of Secondary Education, in the form of the GCSE, is one of the few examplesd of a major reform in this arena that was carried through to successful implementation and even it has been under attack for allegedly 'jeopardizing standards'.

Among the key reference points in the establishment of new 16-plus qualifications is the construction by the National Council for Vocational Qualifications and General National Vocational Qualifications. The NVQs and GNVQs are the source or expression of criteria for accrediting qualifications to pre-determined levels. Although not in themselves qualifications, the NVQ/GNVQ frameworks are designed to have a powerful impact on courses and qualifications. The cases of the Certificates of Pre-vocational Education and its successor the Diploma of Vocational Education, are interesting in this respect.

CERTIFICATE OF PRE-VOCATIONAL EDUCATION AND ITS SUCCESSOR

The FEU has not been without influence in the quest for new qualifications that respond to changing realities. In response to A Basis for Choice the DES took a decision in favour of a new 17-plus qualification, the Certificate of Pre-vocational Education, thereby declaring its intention to make headway in one of the most intractable areas of British educational polity, namely the territory that lies between O level and A level. This qualification, as it emerged from the thickets of educational practices, policies and politics, soon too on a form both narrower and more instrumental than the FEU seems to have envisaged in its consideration of alternatives. It and its proposed successor, the Diploma of Vocational Education, are part of a lengthy, inconclusive saga dating to the Crowther Report which enshrined the specialist, academic subject as the key to post-16 school curriculum and examinations.

In May 1983 the joint Board for Pre-vocational Education was set up by the Business and Technician

Education Council and City and Guilds of London Institute at the request of the Secretary of State for Education in England and Wales. The Board was 'to establish a system of pre-vocational education on a national basis including a 17+qualification' and to have new schemes introduced in schools and colleges from September 1985. The proposals, circulated to all those concerned as The Certificate of Pre-vocational Education: Consultative Document, aimed to meet the needs of about 100,000.

16 year olds of all abilities who would benefit from a further year of full-time education but who require a programme of learning and development neither conventionally academic nor purely vocational to help them prepare for adult life and work.

The courses should be 'demonstrably relevant to the needs of young people is emerging adults and prospective employees' and the curriculum should facilitate.

Not only the acquisition of knowledge and analytical and critical skills, but also constructive and creative activity which involves putting ideas into practice, making doing and organizing.

The CPVE programmes, as described in the document, should incorporate features which by then were becoming staple inputs in school and workbased vocational innovations;

- a balance of core, vocational and additional studies;
- learning through practical experience;
- planned work experience;
- provision for careers education, guidance and support;

- involvement of young people in the planning, organising and assessment of their learning.

The framework for the certificate contained three major components: the common core; the vocational studies ; and the additional studies. Intended to take up 60 percent of course time, the ten defined core areas were: personal and career development ; communication; numeracy; science and technology; skills for learning, decision-making and adaptability; practical skills; social skills; and creative development.

The vocational studies were to be based upon clusters of activities which have a common purpose and related learning objectives and were included because they:

(i) are relevant to young people and may therefore enhance motivation

(ii) provide the focus for the development of the required core skills;

(iii) provide for development of broad vocational skills to appropriate standards;

(iv) provide an important basis for progression into employment, further education and training.

Standards of attainment were to be linked with these nationally agreed for entry into employment and initial and continuing training, with assessment based on a variety of performances.

The additional studies "provide encouragement and opportunity for young people to complement their core and vocational studies with other activities relevant to their own particular interests, capabilities and aspirations'. The additional studies were an optional element, to use up to 25 per cent of course time, designed to meet individual needs and interests within the curriculum and might lead to additional qualifications.

The first CPVE programmes started in 1985 and the first certificates were awarded in 1986. The envisaged character of CPVE as a curriculum development can be explored in intention's expressed in various public documents. In government White Papers Training for Jobs and Education and Training for Young people, its is referred to in passing under the heading of developments within education which play a part in equipping young people for work. Better Schools stresses the tiding up role of the CPVE, which is intended to replace a range of existing courses including the pre-vocational courses of the CGLI, BTEC and the Royal Society of Arts, and the Certificate of Extended Education offered by most CSE and GEC Boards.

To think of CPVE merely as 'tiding up' is, however, to overlook its relationship with the principles outlined in A Basis for Choice are a reminder of the strong conviction, during the period when the YTS was attracting substantial resources and publicity, that education and training, general and specific preparation for working life and adult roles can and should be combined with in comprehensive post-16 programmes in which formal education can collaborate closely with workplace. As school participation tares rise, the impetus for a separate, YT. type of training its hold, the need for the thinking and planning that resulted in the CPVE will become ever greater, but it will need to be considerably developed beyond the rather circumscribed limits of the initial formulation.

A Basis for Choice did not attempt to address the full range of educational opportunities available to all 16-or 17-years olds and the CPVE was limited in its potential audience. Neither was part of an explicit, overarching policy designed to clarify structures and coordinate provision.

The authors of A Basis for Choice considered that a common core of learning was an important ingredient for courses and recommended a core which it described as not new but.... derived from knowledge of existing good practice'. Recognition of the value of courses would, in their view, require an unidentifiable core of learning in and be tween courses, which was nationally validated, recognised as educationally sound and which guaranteed certain levels of competence in basic skills in those who gained a certificate. The criterion of trans ferability carries implications for the nature of these core studies, as does the need for flexibility and the desirability of a vocational focus.

The claim for a link between the acquisition of competences needed for survival in an increasingly technological but ill-defined work context and a broad framework of common core leanings is exhibited in the Technical and Vocational Educational Initiative, YTS and CPVE alike. In the CPVE , the common core contribution is described in terms of objectives, learning opportunities and methods of approach to teaching and learning. It is based mainly on the apparent advantages of blurring subject boundaries and avoiding jerky transitions and/or unnecessary repetitions and on the much stressed integration of core and vocational studies. At its inception, the CPVE as a whole-core and vocational studies-was intended, among other things, to 'assist the transition from school to adulthood by further equipping young people with the basic skills, experiences, attitudes, knowledge and personal and social competencies required for success in adult life including work'.

As in the YTS, its was also expected to promote the acquisition of 'process skills' such as 'those of analysis and problem-solving, social skills, personal qualities such as resilience, autonomy and responsibility'; and the capacity to transfer competences from one situation to another. Again, as in YTS core skills, the common core was intended to be used as a checklist against which the performance of individual young people must be matched in order for starting points and learning programmes to be agreed.

Throughout the Consultation Document, emphasis was placed on personal attainment recorded in individual profiles together with certification for all who completed the course and combined with validation to national criteria. Thus the award aspired to embody achievements in 'core and vocational studies with an indication of their highest levels reached where appropriate, together with a statement of the context within which the skills were demonstrated'. The blueprint contained all the then 'acceptable' elements - reflection of individual needs, recording of achievement, certification for all who complete -yet it promised to offer levels of achievement, quality control and recognition and currency for the award.

From this overview of aims and structural features, it is clear that the plan for the CPVE, while locating it firmly in the heart land of the new vocational thinking, envisaged a broad range of educational values and procedures. It was to be, in a sense, the education system's vocational showpiece for the 16-plus age group. It is not our purpose to attempt to assess the efforts made to implement the CPVE and the various kinds of resistance both direct and indirect that it encouraged. Despite proving popular with staff and students, less than a decade after its introduction it had suffered the fate of many other initiatives lack of significant uptake and lack of credibility among employers and the academic community. Moreover, its alleged lack of rigour and limited screening functions have made it appear in some quarters as unduly accommodating educational values that rest uneasily with the more recent approaches through highly stratified, output-based assessments.

In 1990, the Minister of State for Education announced that from September 1991 schools could offer BTEC First courses - effectively providing direct competition to the CPVE from one of its existing joint sponsors, Subsequently, the CGLI was given sole responsibility for the CPVE, with a brief to bring greater rigour into is assessment and ensure clearer progression routes for students. The CGLI proceeded to produce a new qualification, the Diploma of Vocational Education (DVE) to replace both the CPVE and foundation programmes. Yet again, a new qualification containing valuable ideas seems to have vanished beneath 'structural reform', in part no doubt because of inadequate preparation and lack of consesus between the several parties involved or likely to be affected.

The DVE, in the line of decent from the CPVE but with close linkages with the new structures for general and vocational education, will cater for a wider age range (14-19 years) and be taken at three different levels. Like

CPVE, the DVE will have a hybrid quality. The genuine educational objective of putting form and purpose into what has been called a 'pot-pourri' of 16-plus activities will continue to be combined with a sweep of the new vocational influences-the world of work, emphasis on qualifications, short-term employer variation of personal development. A fairly perspective curriculum including a common core of the familiar studies and studies with 'vocational clusters' will be a feature of the DVT. Thus, the DVE will, like the CPVE, maintain a strong orientation towards further, vocational specific training or employment.

Alongside the DVE is to be another new qualification, the Technological Baccalaureate, launched in 1991 and piloted, significantly, in several City Technology Colleges and schools and colleges. The Technology Bac is tailored to the framework of key stages and levels to permit successful candidates, according to the degree standard attained, to proceed to higher education, advanced further education, or further education and training (NVQ3). It is thus a typical case of the adaptiveness - or opportunism - of the examining authorities.

ORIENTING THE SECONDARY CURRICULUM TOWARDS WORK

The general educational foundation of preparation for work and adult life have long been recognised and claimed by the schools, but the meaning of vocational education in the current 'new vocationalism' context involves certain ideas which embody or imply criticism of schools and general, liberal education. The challenge to schools has been: first, to establish closer links with the workplace - that is, work experience, simulated work experience, learning more relevant to the pupils' future lives, links between teachers and local industry, etc.; second, to deploy more practical, problem-solving, initiative-building teaching method, and third, to give greater attention to the acquisition of concrete, measurable, testable skills and competences.

This functionalist strand of educational philosophy has been evident in policy-making and in practice in some schools for many years, certainly since before the establishment of the MSC or the FEU, though it has been strengthened and accelerated in the 1980s. It can be clearly identified in the literature, appearing from time to time over the last 150 years or so of English education. Moreover, the functionalist and instrumentalist elements do not tell the whole story, since the progressive movement in education in the late ninetheenth century and well into the twentieth provides many antecedents to the current emphasis on student-centered education, practical and experimental learning and so on.

Government policy for schools throughout the 1980s was increasingly influenced by the new vocationalism. The New Training Initiative which, outlined proposals for a better trained and more flexible workplace and introduced the YTS, also stressed the need for better preparation in schools for working life.

The last two years of compulsory education are particularly important informing an approach to the work of work. Every pupil needs to be helpful to reach his or her full potential, not only for personal development but to prepare for the whole range of demands which employment will make. The Government is seeking to ensure that the school curriculum develops the personal skills and qualities as well as the knowledge needed for working life, and that links between schools and employers help pupils and teachers to gain a closer understanding of the industrial, commercial base of our society.

This is noteworthy as a clear statement, at the beginning of a decade which witnessed more changes in educational policy then any previous decade, or the responsibility of schools for economic performance. What is interesting is not so much that government wished to stress these objectives - what government faced with declining economic fortunes would not?- but that it was felt necessary to adopt a strongly interventionist stance to do so.

In 1984 another White Paper, Training for Jobs, again primarily concerned with developments in the YTS, stressed the contribution of the schools. It itemized arrangements for the CPVE; for increasing links between employers and schools and colleges, and for introducing the TVEI. But the first item was the school:

The school curriculum is being developed for this purpose. Objective have been set for mathematics and will shortly be set for science teaching. National criteria are being established for the improvement of the 16-plus examinations and their syllabuses. New programmes are in operation for micro-electronics education and for pupils for whom the 16-plus examinations are not designed.

Many other statements aimed at fostering close links between the secondary curriculum and work appeared throughout the 1980s. However, perhaps the most decisive action was that taken by the KSC in launching the TVEI.

THE TECHNICAL AND VOCATIONAL EDUCATION INITIATIVES (TVEI)

The MSC's involvement in preparing young people for working life was taken a step further when the government diverted money from the DES to the MSC and that organisation embarked upon youth training and entered the schools system. This was with the acquiescence of the DES into the curriculum for 14-18-years olds. It was a momentous decision, signifying the largest ever curriculum development project funded and administered by central government with consequential developments in schooling in all parts of the country. The aim was simple, direct and audacious: to change the curriculum for the 14-18 age group by giving it a more practical and applied character and drawing out its function as a bridge to the world for work.

On 12 November 1982 the Prime Minister announced the government's intention to launch an initiative to stimulate the provision of technical and vocational education in the schools, beginning at age 14. The MSC was invited to establish some ten pilot projects of full-time general, technical and vocational education in England and Wales in association with the DES and through local education authorities.

Programmes, although broadly work-oriented, were to be within the education system with LEAs bidding and being bound by the contracts awarded to deliver specified programmes. The lessons from the early, pilot projects were intended from the start to provide a basis for lasting educational developments for 14-18-yeas-olds. At the sometime, like the YTS, the TVEI has no established syllabus; aims and objectives were not narrowly defined and through pilot projects, evaluations and a great deal of debate and discussion, a considerable variety of practice and approach emerged across the country. As with the YTS, the TVEI was to be directed by national guidelines allowing considerable local flexibility. In order to obtain MSC support, programmes had to fulfill criteria defined by a National Steering Group. Although there was no over mention of a core of skills as such to be learnt, all programmes had to include a common or 'core' element; and the characteristics identified for the content of the programmes, as we see below, included areas common to other vocational innovations. The TVEI includes general, technical and vocational elements; "vocational education" is to be interpreted as education in which the students are concerned to acquire generic or specific skills with a view to employment'.

Since the purpose of each project, and the TVEI as a whole, was to explore and best programmes of genera,, technical and vocational education for 14-18-years-olds suitable for replication, a series of very different projects was deliberately launched. Within the overall framework, the goals of the individual projects were numerous and varied, ranging from the introduction and development of new practical/vocational courses through building links with work and adult life to improving examination performance. What those projects had in common was a definite content orientation:

Each project should comprise one or more sets of full-time programmes with the following characteristics:

(1) Equal opportunities should be available to young people of both sexes and they should normally be educated together on courses within each project.

Care should be taken to avoid sex stereo typing.

(2) They should provide four year curricula, with progression from year to year, designed to prepare the student for particular aspects of employment and for adult life in a society liable to rapid change.

(3) They should have clear and specific objectives, including the objective of encour aging initiative, problem-solving abilities, and othr aspects of personal development.

(4) The balance between the general, technical and vocational elements of programmes should vary according to students' individual needs and the stage of the course, but through out the programme there should be both a general and a technical/vocational element.

(5) The technical and vocational elements shoud be broadly related to potential employment opportunities within and outside the geographical area for the young people concerned.

(6) There should be appropriate palnned work experience as an integral part of the programmes, from the age of 15 onwards, bearing in mind the provisions of the Education Act 1973.

(7) Courses offered should be capable of being linked effectively with subsequent training/educational opportunities.

(8) Arrangements should be made for regular assessment and for students and tutors to discuss students' performance/progress. Each student, and his or her parents, should also receive a periodic written assessment, and have an opportunity to discuss this

assessment with the relevant project teachers. Good careers and educational counselling will be essential.

Students would normally be expected to obtain one or more nationally recognised qualifications, according to ability; and they would be issued with a record of achievement. Industry and commerce were to be involved as partners in design and delivery and not merely as recipients of the finished 'product'. All of this has a most familiar ring: the TVEI has been part of the wider strategy whose assumptions and major elements we have seen in the different setting of the new vocationalism.

In September 1983, fourteen LEAs started the first year of TVEI programmesl. This involved 3,315 pupils in 10 school. A further forty-eight LEA pilot projects began in 1984. Scotland joined, but later; the reason offered by one commentator is interesting:

> 'Caledonian caution', a concern to ensure that participation in the initiative would not compromise Scottish educational developments, or breach educational principles which had been established in Scotland as a result of the experiences gained in attempting to introduce vocational elements into the curriculum of Scottish schools during the 1960s.

These experiences led the Scots to abandon the idea that the schools curriculum might be built around 'the vocational perspective'; rather , a balance was required between the vocational emphasis and the broader curriculum of the schools.

In its first phase, the TVEI catered for a small percentage of the relevant age group. But in the light of initial experience, and the willingness of most local authorities to co-operate, plans were announced in the summer of 1986 to extend the TVEI as an option for the entire 14-18 age group by 1997. Funding per school was to be lower than during the expensive pilot phase. Twelve LEA projects began in 1985, twenty-one in 1986, eleven in 1987 and the remainder in 1988. In 1990, budgetary cuts meant new schools would have less than half their anticipated funding, leading a new schools would have less than half their anticipated funding, leading a number to threaten to withdraw from the scheme. Nonetheless by 1992, the TVEI had become available UK-wide with, for 1992-93, over 1,000,00 students involved, 5,000 schools participating, and all LEAs involved. Responsibility for the TVEI has remained with the MSC and its successor agencies, although the Training and Enterprise Councils (TECs) have shown strong interest in the now 900 million/year activity, as indeed has the DES/DFE.

The TVEI, like the YTS, was a favoured child of the new vocationalism movement. Viewed in one light, it is at the cutting edge, a leader among a series of national initiative to improve preparation for work in life through education and training; in another light, it is part of a series of arrangements devised to impose central government policies on education and training organisations by cash and directive. Its introduction implied dissatisfaction with the exiting curriculum in the schools. Like the YTS, it appeared to be designed to meet a specific utilitarian objective - to provide for employers' needs.

The DES in Better Schools gave a lengthy resume of what the TVEI, at that time, was seen to offer:

The TVEI embodies the Government's policy that education should better equip young people for working life. The courses are designed to cater equally for boys and girls across the whole ability range and with technical or vocational aspirations, and to offer in the compulsory years a broad general education with a strong technical element followed, post-16, by increasing vocational specialization. The course content and teaching methods adopted are intended to develop personal qualities and positive attitudes to wards world as well as a wide range of competence, and more generally to develop a practical approach throughout the curriculum. The projects are innovative and break new ground in many ways, being designed to explore curriculum organisation and development, teaching approaches and learning styles, co-operation between participating institutios,and enhanced careers guidance supported supported by work experience, in order to test the feasibility of sustaining a broad vocational commitment in full-time educaiton for 14-18 year olds.

The form and content of TVEI pilot schemes during the early, creative phase recognised the need for more active learning methods, to meet the challenges posed by changes in industry and the rapid development of technology. Assuming the need for pupils to learn through experience, and to solve practical problems requiring the use of initiative, team work, etc., as a preparation for work, the TVEI 's objectives were;

> first to widen and enrich the curriculum in a way that will help young people to prepare for the world of work, and to develop skills and interests, including creative abilities, that will help them to lead a fuller life and to contribute more to the life of the community; and sec ond, to help students to learn to learn, to to enable them to adapt to the changing occupa

tional environment.

Specific guidance on how to achieve these methods of learning was not given at this time.

The TVEI did not define a core, list core studies or identify essential core skills, though all the first fourteen TVEI pilot projects included some core elements which can be seen as, in practice, constituting a 'TVEI core': for example, careers education and planned work experience, incorporating preparation and follow-up in school. The balance between 'core and 'options' depended very much on local decision, but the first projects, either through core or options, tended to offer broadly similar set of learning opportunities - for example, variety of vocational experience, technology, design, computers, business studies and science. Given the provenance of the TVEI and the purpose it was intended to serve, matters could hardly be otherwise.

The administrative and financial arrangements for the TVEI were innovatory. While in some ways they were more directive and inflexible than the financing methods used by the MSC and its heirs in the YTS, they at the same time offered schools a certain freedom to experiment. Local education authorities were responsible for the formulation and delivery of project proposals. These needed, however, to satisfy centrally determined criteria. The TVEI as a whole was initially administered through a small unit in the MSC, in liasion with the DES over major policy matters. Elaborate involved the MSC, Her Majesty's Inspectorate (HMI) in the DES and the LEAs themselves. Funds available to support the TVEI were normally allocated to meet costs of additional staffing, premises and equipment. In principle to justify receipt of them by their performance, while the percentage of pupil time on the TVEI and the content of activity differed considerably from project to project. In practice the MSC funds potentially offered much needed encouragement and momentum for schools and teachers confidently to explore what they may already have been striving to offer or trying to develop piecemeal. In the words of the TVEI Review of 1984, MSC funding. Enables LEAs to broaden and enrich their existing provision, so as to explore and develop technical and vocational education within a framework of general education for each student involved. In general term, TVEI activities, are broadly based in order to prepare students for a rapidly changing world and to avoid premature specializations. Thus the changes in the curriculum as a result of TVEI go beyond only narrow definition of technical and vocational education.

At the same time LEAs operating TVEI were instructed that

> Each programmes should be part of the total provision of the institution(s) in which it takes place so that the students may take part with others in the life of the institution(s). (The education offered in the institution(s) to those not on the programme should continue to contain technical or vocational elements was appropriate and those not on the programme shout not be adveresly affected by the conduct of the programme.)

The exploration, innovation, and experimentation supported by TVEI and MSC money were from the outset intended to be set firmly in a broad general education context. In terms both of the national structure supporting it and its thematic orientation, the TVEI suggests a strategy that posited age 14 as the terminus of serious endeavours to sustain a fully comprehensive education for all. With the apparent move in many 'extension' schools, however, away from seeing the TVEI as a separate course and towards a broader enhancement of many existing curriculum areas for all pupils, this object may not be achieved.

As Roger points out, the early outlines of the TVEI explain little about why it was set up in the way it was; in order to reach conclusions about its real intentions it is necessary to example the problem it was created to solve. This is not, however, so difficult. Government statements, as we have seen, have tended to define the problem mainly in terms of making good the schools' lack of preparation for successful acquisition of, and performance in, a job. Indeed David (now Lord) Young, as Chairman of MSC in 1982, believed when introducing the TVEI, that it would lead to young people becoming 'highly employable' by the item they left school. But the TVEI as it has come to be organised inpractice need not be viewed only in more functional vocational terms. it is equally possible to emphasis its role in developing communication between schools and industry and its potential as a catalyst in the 14-plus curriculum. Much depends on three factors: local circumstances including pre-existing school-industry links; how it is introduced and managed in individual schools; and the qualifications with which it is associated. The strategy that envisages a parting of the educational ways at age 14 would be aborted were the schools themselves to build the TVEI into the heartland of the curriculum for all.

The effect of the TVEI in any school and its power attract and keep pupils over a wide ability range depend at least in part on each school's interpretation of the guidelines, but most of all on what Dale describes as 'the salience' of the scheme within the schools. This in turn depends on a number of factors; how the scheme is publicised to staff, pupils and parents when selecting options for 14 plus; whether it is developed through existing subjects taught with a new approach or through a series of new subjects and courses; whether it is offered openly to a targeted group, defined by ability, or implicity by the a subject options which it is associated with; the calibre of the teachers and so on.

Early studies of the TVEI, suggested that it son attracted some A level students and boosted staying-on rates at school. In 1986 in Solihull, for example the percentage if the age group staying on in schools after 16 was 10 per cent; but among TVEI, students entering their third year, the retention rate was 50 per cent. Moreover, the TVEI, began to infiltrate A level courses. Sixth-form college A level students getting experience of the TVEI, for the obligatory non-GCE work found it a challenging option.

These assessments refer to the early, more innovative phases in the development of the TVEI, when it attracted a good deal of positive interest notwithstanding anxieties about the in roads being made by an essentially employment-based agency (MSC) into the school system. Extension, following the joint DOE/DES White Paper, inevitably meant greater consistency and an attempt to sift from the diverse experiments of the pilot phase approaches that seemed to hold greater promise for a national policy. The national curriculum was being developed concurrently. From one point of view the prescriptive character of the national curriculum undermined and diversity inherent in the TVEI and together with other factors weakened its impact: "The status of TVEI was gradually being undermined and marginalised by displacement by other educational reforms and the diminution of its funding'. From another standpoint, however, the TVEI succeeded precisely because of its incorporation into the new curriculum policies and structures. The frequency of change is not, however, justified by such incorporation. Is the TVEI yet another vocational initiative introduced without due thought being given as to its implications and likely consequences for these system as a whole?

For schools, the TVEI has been a central strands of the new vocationalism because of its aims, its explicit work orientation, its method of introduction, and financial arrangements. It has the familiar form of compulsory criteria coupled with curricular flexibility, itself a curious if increasingly accepted combination. Unlike the YTS, its pilot and evolutionary stages have not been rapidly followed by greater prescription and reduced flexibility; however, in the extension phase, the TVEI was broadened to the whole curriculum and linked with other initiatives, inevitably with the national curriculum for schools. It is still the individual interpretations of local authorities and the freedom of teachers, if they care to exercise it creatively in whatever they teach, which will decide the shape of the programmes. What the TVEI has to offer for replication nationally is tis individual approach to curriculum planning, grounded in the work orientation stated in its first set of aims, rather then a standard package, together with potential as a catalyst for the 14-plus curriculum. The initiative has had a number of position results, the method of financing has ensured the establishment and not only the design of new courses; nor practical and applied work is observable in classrooms; links with local employers have been established.

The advent of the national curriculum posed a real challenge for successful expansion of the TVEI to all schools, not because it would of necessity excluded it but because of the need for teachers and authorities to recast their approaches in the new curriculum framework. As yet it is not clear how it welfare, given that the TVEI is still a programme for some, not all students. However, the TVEI has been credited, by HMI, with a role in the development of GCSE and in the evolution of cross-curriculum themes in the national curriculum.

While specific studies of the TVEI, such as those by researchers at New castle and Leeds Universities, and more general appraisals of policy and direction including those cited above, give rise to rather diverse conclusion, two points are clear. First, the TVEI has been a highly innovative and dynamic national programme which quickly made visible several of the main themes in the government's commitment to and understanding of the new vocationalism. Second, as a funded initiative designed to grow attention to one of the elements in a shifting, evolving set of national policies and programmes, the TVEI would eventually be assimilated of closely related to the emerging foci of concern in those policies and the subject to the common pattern of innovation funding whereby start-up expenditures are progressively reduced. With the reservations noted above - that is, the too rapid succession of new initiatives - the TVEI legacy will be the impetus and reinforcement it has given to the vocationalist idea that schooling should, among other functions, orient young people towards work and actively assist them to prepare for working life.

ENTERPRISE CULTURE AND PARTNERSHIP

While the most obvious features of the new vocationalism discussed in this chapter are summed up in the terms 'vocational' or 'work orientation', direct work preparation or vocational training have to be put in a much broader context. On the one hand, the foreshadowed distinctive vocational culture and separate administrative structure have gradually been assimilated to the general education system specifically of schools and further education colleges. On the other hand, the urgency of the youth unemployment problem has diminished: It is an acceptable and 'politically bearable' problem; the youth labour market has virtually evaporated except for part-time and certain low paid jobs and the informal labour market. For these reasons, changes in the formal educational structure, in curriculum, teaching and learning and relations with the wider environment, must becọme the central concern of policy-makers and developers, whether specifically identified as 'vocational' or 'general', 'training 'or 'education'. Attention must, once again, be focused on the fundamental challenges to schooling - broadly defined, and away from specific, particularly non-school-based, preparatory courses for adolescent with employment in mind.

Many of the ideas and practices which emerged in the more specific work preparation programmes have become of recognised value in schooling - as we saw in discussing the TVEI. One of them, school industry partnerships, has long been a feature of vocational and technical education institutions and programmes. Another, enterprise skills, is closely associated with changing practice in work organisation and with the attention labour market and employment policy-makers have been giving to the skills needed by people who will gain employment by setting up their own business or in small-scale enterprises. 'Partnerships" and 'enterprise skills' are likely to gain considerable support in schooling, at all levels, since they coincide with long-established educational ideals and practices: school-community relations and the fostering in schools of initiative, creativity, independence and the ability to work with others.

A large number of projects and programmes under the banners of 'partnership' and 'enterprise education' have sprung up within the orbit of the new vocaltionalism with, on the ground locally, often considerable interaction between the projects and programmes. The most common forms of school-industry links in English secondary schools have been: work experience placements, curriculum development involving industry and problem-solving projects specifically with industry. The development of such school-industry partnerships has also been widespread since the 1980s among other industrialised countries, with the key emerging pattern being that 'the vast majority of partnerships are small, local and basic'.

There are, in effect , two definitions of, or approaches to, the work 'enterprise' and the practice of it. One approach, which can be termed a 'narrow' one, regards enterprise as business entrepreneurialism, and sees its promotion and development within education and training systems as an issue of curriculum development which enables young people to learn, usually on an experimental basis, about business start-up and management. The second approach, which can be termed the 'broad' one, regards enterprise as a group of qualities and competences which enable individuals, organisations, communities, societies and cultures to be flexible, creative and adaptable in the face of, and as contributors to, rapid social and economic change. What is significant about the implications of the broad approach for educationalists is that it requires changes in education methods and pedagogy towards what is termed 'enterprise learning' rather than changes in the curriculum.

SCHOOL-INDUSTRY PARTNERSHIPS AND COMPACTS

The recent activity in school-industry partnerships in the U.K. is traced by Lawlor and Miller to the schools Council Industry Project, established in 1978 soon after James Callaghan's Ruskin College speech. Involving the Confedration of British Industry, it emphasised from the beginning local solutions to local problems, work experience, the development of simulations and case studies, and has pioneered mini-enterprise in schools. The launch of the TVEI in 1982, as were have seen, gave a strong impetus to variety of school-industry contacts, during both its pilot and extension phases. Industry, Year, designated in 1986 by the Royal Society of Arts, proved a concerted attempt to raise the esteem in which industry was held, through bringing together into local committees people from education and industry, to organise at least one activity or event in every school and college during the year.

In September 1988, the Enterprise and Education Initiative was launched by the Secretaries of State for Trade and Industry, Employment, and Education and Science. The Initiative was to encourage.

> More employers to become involved with their local schools. In particular, a network of advisory on enterprise and education, mainly based in the private sector, is being established to help employers link up with schools in their area. They will work closely with all those involved in business and education link activities in their areas and will contribute to better co-ordination at the local level. Specific objectives include ensuring that enough employers are involved so as to provide work experience for every pupil before leaving school and for 10 per cent of teachers a year.

Initiatives in the higher and further education sectors were also outlined at the same time.

In 1990, another grand initiative, the Education Business partnership Initiative, was announced by the Secretaries of State for Employment Education and Science, and Trade and Industry.

Partnerships between education and business offer opportunities to make education more relevant to life and work; to raise standards and levels of attainment, to raise enterprise awareness and industrial understanding amongst teachers and students, and to inform and develop advice and counselling so that individuals are better placed to build and use their skills.

A number of demonstrable outcomes were expected from partnership activities, including:

- increased business involvement with; and support for, primary and secondary education;
- improved opportunities to assist students in school

and college in the transition work;

- increased volume, relevance and breadth of information and guidance offered to students by careers teachers and the Careers Service;
- increased numbers of young people staying in relevant and appropriate full-time and part-time education;
- improved access to, and participation in, further and higher education.

The partnership, which was to be developed locally by the then newly established TECs, thus had very ambitious and wide-ranging goals, with the expectations that activities in each locality would vary.

Of particular note among the plethora of school-industry link activities has been the development of compacts, modelled on the Boston, USA, compact of the early 1980s. The 'London Compact', launched in March 1987, was essentially an agreement between schools and employers in an area of high social and economic deprivation, with a history of mistrust and hostility between employers and educators. The agreement guaranteed offers of local jobs to pupils at participating inner-city schools if they fulfilled their side of the compact. This meant students attending 85 per cent of lessons, meeting nine out of ten deadlines for all assignments, completing a school record of achievement and satisfactorily completing two weeks of work experience. Ainley notes that in reality.

While they do not explicitly guarantee employment, employer undertake to give priority in job offers to those school-leavers who achieve the educational targets. This can mean a guaranteed interview or a reserved place on a company-run Youth Training scheme. Participating employers also support school-industry links with experience, work shadowing, holiday jobs and teacher-industry exchanges.

Run by the London Education Business Partnership, the scheme initially involved the now defunct Inner London Education Authority and a consortium, of companies, among them Whitbread, whose communist programme director, Richard Martineu, was the moving force behind the initiative. One of the compact's main initial objectives was to encourages continued education in schools and colleges and increase the level of training at work. Employers would give day-release for school-leavers to continue studies and improve their qualifications. In the London pilot schools, teachers reported a dramatic growth in pupil retention at school after 16, where the compact's guarantee of a job held good until pupils were aged 18. Other effects to do with positive orientation towards work and becoming better qualified were reported.

The first year of the London Compact was seen as so successful that in 198 the government adopted the idea and launched the compact initiative nationally, in the context of its Action for Cities programme. For the national initiative.

> A Compact is an agreement between employers, young people, schools and colleges. Employers guarantee a job with training, or training leading to a job, to at least YTS standard, for every participating young person who has achieved a set of agreed personal goals and

objectives. And every school and college involved undertakes to support and encourage young people in the achievement of standards and competences. Eventually, employers may wish to encourage young people to go onto further and higher education in order to meet their skills shortages at professional, managerial and technical level. This encouragement could include individual sponsorship, work experience and either full-time release.

In the first year of the programmes, the government funded compacts in thirty areas of the country, and by 1989 it had become a 17 million programme of the Department of Employment. Subsequently, new forms of compacts were initiated in which higher and further education institutions guaranteed places on programmes to local students if they met previously agreed criteria. In at least Birmingham and London, there has been considerable productive interplay between compacts and the TVEI in local schools.

The interest of the compact initiative is in the positive - and formal - support seen to be given by local industries and employers to the mainstream education system; expensive new initiatives of the CTC variety, discussed below, are not part of the approach. Compacts are practical, unostentatious and something which could feasibly by - and indeed have already been - generalised to many areas of the country. Experience of compacts has shown that the idea of a deal between schools and businesses linked to student performance and recruitment can indeed help generate enthusiasm, but needs to be handled with care. Inevitably, comparisons are drawn between the CTC and compact initiatives and employers have generally had to choose which to support, given the limitation on resources.

NEW KINDS OF SCHOOLS

Consistent with its intention to reintroduce into a putative comprehensive system firm distinctions between different routes, whether to higher education or to a restructures technical - vocational system, late in 1986 the government announced plans to establish, as part of its Action for Cities Programme, twenty independent City Technology Colleges in selected inner-city locations. Each was to take between 750 and 1,000 11-18-year-old students across the full ability range. IT was intended that the first colleges would open in 1988, and the full twenty be in operation by 1990. While progress has been less rapid than anticipated in these optimistic forecasts, the CTCs are yet another manifestation of the national endeavour to build bridges between education and employment.

Their purpose will be to provide a broadly-based secondary education with a strong technological element there by offering a wider choice of secondary school to parents in certainties and a super preparation for adult and working life to their children.

To be established first on a pilot basis, with the hope that their influence would spread, they were expected to adopt the best practices of the TVEI and successful secondary schools generally. Their status was to be that of registered independent schools, subject to inspection by HMI but charging no fees, and functioning alongside existing secondary schools. While they would obtain financial assistance from the DES, a substantial part of their cost was to be met by 'promoters', a return to the voluntary principle, but a pious hope as subsequent events proved.

CTCs, despite the moderate success thus far in attaining the targets set by government, are of significance at this stage in so far as they signal strategies that go far beyond the institutions themselves. Behind the fundamental policy objective of government to interest the private sector in funding, and thereby to revive the dormant tradition of voluntary provision, lay another purpose, namely the weakening of power of local education authorities, a policy since pursued with great vigour and on a number of fronts.

It was initially intended that CTSs would be established in twenty-seven designated inner-city areas, either purpose built on vacant sites or through purchasing redundant schools. A shortage of suitable sites bedeviled the scheme from the start, and, despite the initial intention of their serving deprived inner-city areas, there has instead been a first come first served approach to their approval, depending on available sites and sponsors being found. There appears, now, to be no geographic plan behind identifying potential CTCs, with three of the first fifteen close to each other in the outer London are.

Sponsorship was much slower than anticipated, with the government by 1991 moving from the position that 'the principle of funding will be that the promoters will meet all or a substantial part of the capital costs' to one which saw 'private business and industry... providing substantial [sic] proportion- at least 20 per cent - of the capital funding for each of the colleges'. Recurrent funding is provided by the state. Because of the high-tech approach to resourcing the school set-up costs have been very high, leading to situation such as that in Nottingham where some 9 million was spent on building the new CTC as against the city's entire annual capital expenditure on all its school of less than 2.5 million. It is thus hardly surprising that the CTC programme has engendered resentment among many working in the less resource favoured state sector, especially at a time when parents are being encouraged to choose schools. While CTCs officially have a non-selective in take, the government-stipulated criteria are seen to be unworkable and there appears no doubt about their taking a disproportionate percentage of the more motivated students, if only because of their preferring those who agree to remain until age 18.

City Technology Colleges are certainly now under way, although the bold plans of twenty CTCs by 1990 was rather drastically revised downwards, with some fifteen to be operational by 1993. Even when the ultimate goal of twenty pilot schools is reached, however, they constitute a very small group in relation to the nation's 4,000 secondary schools and their impact must be awaited. With a few exceptions, industry has been relatively slow in supporting them, reportedly in many cases because of jeopardising existing links with local schools where productive school-industry partnerships exist.

They are more substantially government-supported than anticipated and also in some instances have generated considerable local parent and community antagonisms, especially where existing schools, have been closed down to be sold as CTCs. Disquiet over the impact of CTCs on the offerings, morale and intake in neighbouring schools has been of concern to many education authorities schools and for opting out by main stream schools has been mentioned by some commentators; this point could be more persuasively made if the government's growth targets for CTCs has proved in any way realistic.

Plans for a new network of voluntary-aided CTCs-utilising part of the 1944 Education Act compromise on the then domiant religious question- were announced in 1990. These plans would enable an existing LEA school to apply to become a voluntary-aided CTC-as long as the school could raise 500,000 from sponsors. The government would provide further funds for refurbishment. The CTC Trust hopes also to find a way of enabling grant-maintained schools to gain CTC status.

The CTCs are to be treated as independent schools with no statutory requirement for them to comply with the national curriculum. National curriculum goals are, ever: so, expected to be influential in the different schools developing 'characteristic identities', and early indications support this.

Early indications, again, suggest that the learning programmes CTCs offer their pupils are innovative, and potentially challenging, drawing on much of the TVEI curriculum development of recent years-hardly surprising in a well-resourced, high profile new endeavour. Keeping up the momentum and establishing a well-structured 11-18 programme will prove a considerable challenge in years to come.

The form and content of the CTC curriculum as originally proposed by the DES put equal emphasis on technological content and on standards and attitudes: 'There will be a large technical and practical element within the broad and balanced curriculum.......up to the age of 16. The importance of doing and understanding as well as knowing will be emphasised throughout'. Indeed, cross-curricular approaches based on projects and themes, mixed ability teaching and an emphasis on 'open learning, backed by good investment in information technology have become the early trend.

Increasingly, in CTCs, as elsewhere in secondary education, the emphasis is shifting from the discrete post-16 curriculum to planning for 14-19 education and training. For the majority of young people this will mean a continuum rather than a cut-off point at 16, guided vocal choices beyond 14 leading to increased specialization towards 18 or 19, and a culture which takes for granted that education and training will continue throughout life.

In particular, CTCs are contributing to developments in: integrating post-16 education and the world of work; broadening the curriculum developing new vocational routes which have parity of status with academic progression routes to higher education; developing new curriculum methodologies (by piloting credit transfer schemes, developing modular curricula).

Following the Continental pattern, CTCs operate longer school days, and on more days in the year, than most state-maintained schools. This is to allow for more enrichment activities and a more varied curriculum, and appears to have strong student, parent and teacher support.

It seems probably that CTCs and other schools which take the opt-out/specialist route, with favoured treatment financially and selected pupils, will have sufficient vitality to general their own values and learning patterns. This is to assume that the whole scheme continues to make progress, a subject upon which there has been much debate. We are still at the stage where policies have been declared and initial progress made but not to the point where it is clear that the lines set in the early stages will becomes embedded in the educational and training system.

The establishment of independent CTCs takes a stage further the administrative device introduced by the intervention of the MSC into the secondary schools with the launch of the TVEI. In November 1982, the then Chairman of the MSC, David Young, observed:

Much has been made in the media........that the MSC has the power and the authority to open its own establishments, so let me say at the outset that we have no intention of doing that as I believe and hope we can work as partners with the local education authorities. If that did not prove possible, them we might have to think again.

In practice, local authorities have been willing to bid for resources with which to experiment with the TVEI. We have seen some LEAs willing to bear the brunt of parent and community opposition to closing existing schools, then selling them to open as CTCs. But we have also seen only a handful of major sponsors coming forward to endow CTCs, and the government needfully committing vastly greater funding than initially planned to the project.

In common with most of the initiatives under the new vocationalism, for the CTCs there is a variety of ostensible objectives: to prepare children for jobs with a high technological content; to give parents greater choice of school and slow responsiveness to criticism of existing schooling; and to help fight inner-city decay. As with other new vocationalism policies, it is important to examine very carefully the real, sometimes hidden, objectives. The published material about the CTCs makes it clear that although the organising principles and pedagogy of the education likely to be offered in CTCs bear marked similarities to the YTS and TVEI, the real point of CTCs, as far as governments concerned, lies in their broader new vocationalism characteristics and in the potential of CTCs, in consort with the other developments, to weaken the ideology and to restructure the framework of all-through comprehensive education. The CTC initiative, like its forebears, increases central government power, at the expense of the local authorities. This is the DES/DEF version of the instruments used effectively by the MSC for rapid construction and change - mainly the disposal of substantial sums of government money.

The CTCs also form part of the government strategy of offering choice to the parent - the shopping basket of schools. Parents, keen to choose new publicity-conscious schools which appear likely to increase the pupils' job prospects, could well be attracted by the standards of discipline, the emphasis on attitudes and the acquisition of qualifications. But many parents appear reluctant to do this at the expense of losing existing schools.

The most likely pattern of development is the establishment and successful operation of a relatively small number of CTCs. These will act as development and demonstrations ties for both official and unofficial ideas about more practical, applied, work/industry-related education. Their influence on the national system is likely to be quite moderate overall, but on specific topics - for example, project-based teaching, school-industry partnerships, advanced technology teaching - some of them may serve a lighthouse role. Its for these reasons, not the scale of the innovation, that the CTC project deserves closer scrutiny and its development will be watched with considerable interest by the whole education community and not only those with a particular vocational bent.

A not unrelated development is the Technology Schools Initiative TSI which was launched in December 1991 by the then Minister of State Tim Eggar. It aims at establishing a network of secondary schools committed to providing technology and associated courses of a strong vocational nature. Eventually the experience of these TSI schools should be disseminated system-wide. The initiative allocated capital funding for equipment and building work, totaling some 50 million, to 222 schools over the first two years.

Chapter-4

Vocational Education and New Methodology

The rhetoric of skills is much in evidence. We hear of 'skills for the future', 'relevant skills', 'the skill demands of new technology' and the 'skill needed to survive in the modern world'. The aim of this chapter is to examine the notions behind the rhetoric, and to consider whether an education based on skills has either intrinsic worth or economic utility.

The chapter contains what might be considered an unlikely mixture. Examples of the use of the terms skills, vocational education are followed by a critical discussion of these terms, particularly the notions of specific and generic skills. This use of language is then related to the needs of employers and the language in which those needs are phased. In particular, the demand which will be made of Britain's education and training systems from the field of information technology are examined by considering both British initiatives and the Japanese approach. Is the rhetoric of skills of value in meeting the educational demands or new technology.

THE GROWTH OF THE LANGUAGE OF SKILLS AND PRE-VOCATIONAL EDUCATION.

Surely it was James Callaghan who started it all. Callaghan's so-called Ruskin College Speech of 1976 contained an attack on informal, modern teaching methods, a 'concern for standards', and a criticism of the poor relationship between schools and industry. In short, he questioned the very function of schooling by suggesting that schools were not providing the necessary skills. Two statements from the Ruskin College speech serve to illustrate this point:

> I am concerned.... to find complaints from industry that new recruits from the schools sometimes do not have the basic tools to do the job later.
>
> There is not virtue in producing socially well adjusted members of society who are unemployed because they do not have the skills.

Thus began 'educational newspeak'. Educational objectives were being defined sin terms of skills-not a new strategy but one which served Callaghan well, more importantly, provided a framework for the language of Government White Papers in the 1980s. The language of skills, skill-defects, skill-shortages, skill centres, skill training and skills in new technology is now firmly embedded in educational parlance.

Two points of major importance emerged from Callaghan's speech which have had a potent (through often tacit) influence on discussions of education ever since. The first point, by implication, is that one of the key factors in the rise of unemployment is the shortage of relevant skills, This can be called the 'skills-deficit' of unemployment. It is a model which is adopted implicitly, and sometimes explicitly, by the Government White Papers discussed shortly. In adopting this model Callaghan was suggesting that one of the key functions of education is as an instrument to provide 'necessary skills' and thereby reduce youth unemployment. The second implication is that a set of 'relevant ' or 'necessary' skills exist which (if required) would make students more employable and, in Callaghan's words, provide the 'basic tools to do the job'. Callaghan made no attempt to outline what these necessary or relevant skills are-he simply implied that they exist.

Since Callaghan's speech (though not as a result of it) unemployment has risen form 1.2 million to somewhere between three and four million. This steady increase in unemployment had led, paradoxically, to a strengthening of the bonds between education and employment.

The impact of unemployment on education can be crudely, but usefully, divided into four sequential stages:

1. The implicit promise in schooling (i.e., 'work hard at school to get a job after it') is under mined.
2. The direction and traditional function of schooling and education are questioned.
3. Education, training, and 'pre-vocational education' are increasingly seen as an instrument to respond to youth unemployment.
4. The bonds between education and employment are tightened.

The latter stage is perhaps the irony in the influence of rising unemployment on education. It seems a paradox that the main effect of unemployment has been to strengthen the bonds between education and employment, and lead to the growth of pre-vocational education. This is the area where skills as educational objectives are most in evidence.

The two key White Papers which helped to develop the notion of 'pre-vocational education' were entitled A New Training Initiative and Training for job. The former was one of the key documents leading to the YTS . The aim of the paper was to provide 'better preparation for working life in initial full-time education', a reflection of the fourth stage described above. The paper therefore aimed to ensure that 'the school curriculum develops the personal skills.... needed for working life'. The reader is left searching in vain through the remainder of the paper for a clarification of which skills are needed for working life.

It (the YTS) will aim to develop basic and recognised skills which employers will require in the future.

Some mention is made in the following paragraph of specific skills, literacy, numeracy and communication skills are listed. However, these could hardly be said to lie outside the realms of general education. Nowhere in the paper is an attempt made to specify the skills required for a truly vocational education, or the skills which 'employers will require in the future'.

The question of whether these skills exist, how they can be specified and if so what they are, is one of the issues I would like to raise in this paper.

The 1981 White Paper also contains three by key paragraphs which reveal two implicit models of the causes of unemployment and its relation to education.

The skill shortages which have held back our economic progress in the past could reappear when the economy recovers.

For the immediate future the Government seen an increase of public expenditure on this scale as the only way of plugging the gap in the training provision required if we are to be ready to meet the skill needs of the economy as trading conditions improve and to offer adequate opportunities to the current generation of young people.

For many years now our system of training has failed to produce the number of skilled people required by a modern competitive economy.

These paragraphs are interesting for two reasons. Firstly, they tacitly rely on two models of unemployment. The skill-deficit model comes through strongly in all three paragraphs. The second model of unemployment, which can be called the 'cyclical model', suggests that an upturn of the economy is 'just around the corner and that unemployment will decrease as trading conditions and the economy recover. This model is now more than five years old but recovery is not yet in sight. Both models have been attacked by established authors since 1981. Stomer, for example, argues that unemployment patterns are caused by structural changes within society in undergoing a revolution from an industrial to a post-industrial era. Unemployment patterns are not fundamentally altered by skills shortages or by cyclical changes in trading conditions. Stonier's argument is supported by raw statistical data. Japanese labour trends indicate that structural changes are indeed occurring in their rather advanced industrial society. There has been a clear trend, which is still continuing, towards service industries and the so-called 'information sector'. The Japanese have even coined a world for it which cannot be printed here but means roughly 'servicization'. Similar, though more depressing trends, can be seen in the statistical data on Britain. Primary and secondary industry have both declined sharply while only service industries have grown.

The reliance of the 1981 White Paper on the skill-deficit and cyclical models of unemployment clearly determines its views on education and training. This comes through most clearly in its references to 'skill needs', system of training', 'skill shortages', and the suggestion that unemployment can be tackled by tightening the bonds between education and employment i.e., by pre-vocational education.

Three years later the 1984 White Paper, Training for jobs, seemed to be offering similar explanations of unemployment and the failure of education despite the published warnings of Stonier, Toffler and even of Daniel Bell a decade earlier. The skills-deficit model of unemployment comes through clearly:

> It (vocational education) will enable many more people to be trained and improve their prospects of employment by placing greater emphasis on equipping them with skills that are currently required.

As in the 1981 paper, no attempt is made to investigate or even clarify the notion of 'skills that re currently required'. References are again made to 'skill shortages holding us back' but no suggestion is made as to which skills are in short supply. One reference only is made to the effect of new technology upon training and employment.

The main objective of this strategy (training programmes) is to secure an adequate supply of people with up-to-date skills to meet the demands of new technologies upon which economic growth must be based.

This reference to up-to-dare skills meeting the demands of new technologies will be investigated later in the paper. The main aim of this section has been to trace the rise of the rhetoric of skills, and alongside it the notion of pre-vocational education. The twin notions of 'skills' and 'pre-vocational education' will now examined.

THE CONCEPTS OF PRE-VOCATIONAL AND VOCATIONAL EDUCATION

The notion of vocational education is in itself difficult to interpret. 'Vocation' is usually associated with training so that the idea of 'Vocation training' makes perfect sense. Training is linked to specific job, career, skill or vocation, when discussing training, it always make sense to ask 'training for what?' Indeed the notion of training makes no sense at all unless it is a training as or for 'something'. A person can be training as a car mechanic, training for a Judo competition, or training as an account. To say that sometime is training always begs the further question as or for what. Education, unlike training, can stand on its own without being linked to some other aim, goal or vocation. This is perhaps why the concept of "vocational education" is almost a contradiction to certain purists. But, given the instrumentalism or 'new vocationalism' set in motion by James Callaghan it has now become increasingly common-place to ask of education,, for what?' Hence, the notion of vocational education has become more widespread and perhaps more palatable as 'education' is interpreted as 'training'.

But the notions of pre-vocational education still remains an enigma to translate. Can you imagine a teacher trying to explain the idea to a worried parent?

Teacher: Well, it's the education that your child gets before he (she) starts on his (her) vocational education.

Parent: Well, what's vocational education, then?

Teacher: Well, it's the education your child gets once he (she) has finished his (her) pre-vocational education.

The concept of pre-vocational educational remains a mystery to me, and (in a most cowardly fashion) I will give up any further attempt to translate it.

Dearden, with his usual rigour and clarity, analyses the notions of vocational education and training in a valuable way (though he sheds no light on the notion of pre-vocational education, so at least I am in good company). Dearden's main general point is that education and training, are 'different but not necessarily mutually exclusive'. In other works, the same learning experience may quality to be called either education or training, or perhaps both. One such area at the intersection of the two concepts may be vocational education, which could therefore equally be called vocational training. This would be in sharp contrast to other experiences where the labels' 'education' and 'training' imply totally different activities. Sex training and sex education will provide totally different experiences - if the former were adopted on the school curriculum, for example, i believe it might cause far more parental anxiety than the latter.

However, vocational training could only be worthy of the term 'vocational education' if it were 'liberally conceived', and included 'learning about the nature of work, discussing its forms and contexts: a version of careers then the notion of 'vocational training' and 'vocational education' might indeed by synonymous, and there might also be some meaning for the notion of pre-vocational education in terms of the wider, more liberal concept which Dearden describes.

In practice, however, the notion of vocation training is almost always translated in terms of 'skills' which can be specified and stated. If we use Dearden's perfectly acceptable view that education should involve 'the development of knowledge and understanding in breadth and depth' and a 'degree of critical reflectiveness and corresponding autonomy of judgment' then learning experiences involving only skills cannot possibly be called 'vocational education'. This assertion rests on the analysis of 'skills' which now follows.

THE LANGUAGE OF SKILLS

The interpretation of vocational education, used synonymously with vocational training, is given almost entirely in terms of skills in the White Papers cited above. Similarly, the aims and content for the YTS are based firmly on a Core Skills Programme, consisting of a set of 103 identified skills. This approach is in turn based on the influential IMS report, Foundation Training Issues. The language of skills is also employed in the 1985 White Paper, Better Schools, which talks of the 'skills and attitudes needed for adult and working life' and 'the issue of how best to fit work-related skills within fulltime education'. In addition, the documents of both the FEU and the MSC have relied heavily on the notions of skills in describing aims and contents. I do not propose to analyse any of those documents in detail here. A detailed and rigorous analysis of the documents on which YTS is based, for example, can be found in Ruth Jonathan's.

This section will examine briefly the notion of a 'skill' and then go on to consider its father-figure, the generic or transferable skill. In so doing, I hope to show that a worthwhile vocational education can never be defined solely in terms of skills. The language of skills may be necessary, but it can never be sufficient.

In addition, a skill-based education may not be very valuable to employers, particularly those involved in new technology. The final sections of this chapter examine the value of the language of skills in matching education and training to the needs of employers in new fields jus as information technology. My contention is that a narrow skills-based definition of education makes neither conceptual nor economic sense.

THE NOTION OF A SKILL

The rigid knowledge/skill/attitude division is reminiscent of Bloom's three domains of objectives; cognitive, psychomotor and affective as well as psychomotor-the skills of literacy criticism, violin playing or counselling a patient are given as examples. This broadening of the notion of skills to include cognitive and effective aspects beings the notion which nearer to Ryle's concept of knowing how as opposed to knowing that. Unfortunately, this broader and more acceptable notion of skill is not applied in the Skilled in Schools document, or the previous FEU, IMS and MSC publications on which it relies. This is clear from its definition of a skill: 'A skill is the ability to undertake an action given circumstances to a defined degree of expertise'.

That definition clearly relies on a psychomotor notion of skill and behaviourist-based view of education. Is skills necessarily tied to action'? There seems to be no logical connection between a skill and a physical action. Can all skills be governed by a 'defined degree of expertise'? If so, where does this leave the mental process in the exercise of a skill?

The bias towards behavioural and psychomotor skills is shown in the lists of skills which are given aspart a possible 'core' of identifiable skills required by school leavers. Included in the list are such skills as :

……

Read and write numbers
Pull, Push, lift and carry
Count objects
Cut materials with scissors, shears etc.

……

In fairness, however, many of the 'core' skills are on a higher level and are listed as:

……

Give answers
Advise
Decide job priorities
Deal with complaints
Explains something
Describe or give information

……

But surely not one of the latter group of skills makes any sense or carriers any meaning without a context. How can a person posses 'advising skill' which is context and knowledge independent? This is the first major point that I would like to propose in discussing the notion of a skill. A skill cannot exist except within a certain context, and within a framework of prior knowledge and understanding. How can a person 'decide on job priorities' without an adequate understanding of the relevant context, the necessary information and the prior knowledge of either facts or general principles?

This, in my view, is the essential mistake in the rhetoric of skills i.e., the belief that a worthwhile skills can be separated off and defined in isolation from the context of understanding and knowledge which surrounds it. That mistake is made in both science and technology education. Lists of scientific skills are given for example, which include 'observation skills', the ability to hypothesize', 'predicting and informing', 'controlling variables' and so on. Yet not one of these science skills has any sense or meaning in isolation from the knowledge-base, framework or paradigm which forms the foundation of science. As Popper is so often quoted as saying, observation is theory-laden. The same is true of hypothesizing, inferring, controlling variables and all the other skills involved in science. A science or technology education which is biased totally towards skills will be as meaningless and empty as one which concentrates soley on content or propositional knowledge.

In short, skill without knowledge are empty. This will be particularly true in 'new industry', as I will argue later, which is by its very nature Knowledge-intensive.

GENERIC AND TRANSFERABLE SKILLS

Two criticism of a skills-based approach to education and training are:

1. That it often produces lists of skills which, although easily definable, are often trial and demanding.

2. That a narrow, and specifically-stated, skills-based approach to training is hopelessly vulnerable to changes in society and in technology.

As Ruth Jonathan puts it, 'the more specific the skills, the shorter their useful life'. These twin criticisms of trivialization and vulnerability to change have pushed forward the notion of 'generic' or 'transferable' skills. These higher level skills are 'fundamental to the performance of a number of activities carried out in a range of contexts', and are significant for vocational education because they are 'generic to a wide variety of occupations and are transferable between vocationally specific areas' (Perry and Barnett 1985).

I would like to examine some of these generic skills and show that, as with specific skills, few of them carry meaning if seen as context and knowledge independent. To hold them up as educational goeals in themselves therefore, is both vague and conceptually unsound. Lists of generic, transferable skills often include the following.

Problem-solving
planning
diagnosis
information holding
decision-making
communicating

Take 'information-handling', for example. This is often put forward as one of the key skills for the future, and who could doubt this is an age where information is said to be vital resource and where the possession of propositional, factual knowledge ('knowledge that') can only decrease in importance as an educational goal. Information skills will involve the ability to collect, prepare, code and retrieve information, in conjuction with the endless capability of new information technology to process and communicate this information. But information skills, vital though they may be in serving education, can never provide an educational goal in themselves. Information skills alone, without ends and purpose, have no meaning or value. They cannot exist in a vacuum. Education does not involve the passive handling and acquisition of information. Active and meaningful education involve selecting, interpreting and transforming information according to the leaner's previous experiences, present needs and purpose, and prior knowledge. Information skills are to caricature Popper, knowledge and context laden.

Similar points can be made about an equally valued generic skill, 'problem-solving'. Can such a skill be knowledge and context independent? In other worlds, can the ability to solve problems in one domain transfer across to another? The question of generic skills, therefore, rests squarely on a debate which is totally unsettled and indeed has occupied psychologists for much of this century: transfer of learning. This issue, like the heredity versus environment debate, is by its very nature unlikely to be decide conclusively. Perhaps the belief that skills can be transferred from one are to another is, like pseudo-scientific hypotheses, incapable of falsification. Yet the bulk of the literature which puts forward generic skills as the aims of education and training totally ignores the question of transfer.

The same question mark can be placed over the generic skill of 'decision-making'. Is there any evidence to show that decision-making in one domain, e.g., the art of Cordon Bleu cooking, its transferable to another domain, e.f., car repair and maintenance? Indeed how could such a belief ever be falsified let alone confirmed? Dearden makes similar points in discussing' good judgement':

> ....simply because good judgement can be exercised in both the stock market and in laying a hot air balloon, does not follow that there is some general skill of 'good judgement' which is common to both and in which we could be trained free from any particular context.

My contention, therefore, is that the language of generic skills can be criticized on two related counts. Firstly, skills of any kind are context and knowledge dependent-skills without knowledge are empty. Secondly, the belief that there are genuine, transferable skills which are the proper aim of education and training ignores the contentious question of transfer.

A third objection to the language of transferable skills, which is based on political grounds, is given by Cohen. He argues that many of the new initiatives in training are based on 'a hidden agenda for redeploying the notion of the skill itself'. By dissociating skill from specific practices and defining it in terms 'certain abstract universals', a pool of 'abstract labour' can be created thereby undermining the control by skilled manual workers over conditions of entry and training in their own trades. This may well be as much a consequence of new technology, however, as a political ploy-a point which Cohen acknowledges:

> What 'transferable skilling' corresponds to in reality is the process of deskilling set in mo

tion by new information technologies.

The question of the relation of skills to the problems posed by new technologies will be returned to later.

A similar attack on the redeployment of the notion of skill is given by Ann Wickham in Dale. She suggests that the notions of skill has been redefined which, in turn, has given 'training' a new meaning:

> In the past the notion of skill had been associated with craft work, with a combination of mental and physical desterity in a particular area of work. Under the aegis of the Special Programmes Division (of the MSC) a much wider definition of skill came into use. Skill was regarded more as a way of organizing activity and involved a combination of what are now regarded as individual skills and gen eral skills, that is numeracy, communication and practical skills, together with social and life skills, attitudes to work and a knowl edge of working life. Training was.....given a new meaning which was removed from that traditionally used.

This redefinition of the term 'skill' can be seen in its recent broadening to include 'social and life skills', 'employment skills', 'communication skills', attitudes to work", 'preparation for life skills', and so on. It is as if the concept of skill has ascended to a new level to embrace not only competencies but also abilities, aptitudes, dispositions, and attitudes. It needs only to subsume the concepts of knowledge, thinking, understanding and motivation to have taken over as an umbrella term covering the whole of education. We may soon be talking of the skills of understanding and knowing just as we already talk of thinking skills, reading skills, social skills and even moral skills.

Hart argued with emotion against such distortion of language:

> If you don't hold out against talk of 'skills', if you don't see that 'skills' only account for part, and that the less important part, of what we learn, you are driven to conclude that there is nothing for which a man can be held responsible or in which he can see himself mirrored.

Hart's paper makes two valuable points. Firstly, that talk of skills 'is simply a kind of incantation, by which one creates the illusion that one is actually saying something about education'. In other words the addition of the label 'skill' actually adds nothing descriptive. How, for example, does 'reading' differ from 'reading skill'? The same is true of the language launched by Callaghan's great debate. Much talk was, and is, heard of 'relevant skills'. Those terms have yet to be given any concrete, descriptive meaning. Indeed the noun 'relevance', and the adjective 'relevant', have no meaning on their own. Like the term 'skill', they are almost always used as terms of incarnation, a seal of approval, having no descriptive but only emotive meaning. To describe a skill as relevant is meaningless. We need always to ask the questions 'relevant to what?' And 'relevant to whom'? This confusion over relevance is particularly important in considering the 'skills relevant' to new technology.

Hart's second main point, as I interpret it, is that the acquisition of skills is, in a sense, an activity of tackling on of appending skills to bodies. It is largely impersonal process. In contrast, truly educational processes will profoundly affect and alter the person involved. This is not true of skills, as they are traditionally conceived.

Educaton, whatever else is involved in it, is about the individual person and his development; and it's been my contention that a skill can contribute to that development, the continual forming and reforming of the person. So that when receiving an education is conceived of, as it is so often today, in terms of acquiring skills, it is conceived of as something superficial.

This point leads in to the next two sections of the chapter. Does industry want bodies with skills 'ap-pended' to them? Do employers in fact phrase their requirements in the language of skills? Does it make either practical or conceptual sense to discuss the needs of new technology in terms of 'relevant skills' and 'skills shortages'.

THE LANGUAGE OF SKILLS AND THE NEEDS OF EMPLOYERS

An important article by Gilroy discusses the value of conceptual analysis in clarifying the work done in empirical research - similar points are made by Barrow in Giving Teaching Back to the Teachers. Gilroy implies, however, that it is not only the 'philosopher' who is 'competent to identify and resolve linguistic confusion.' There is a role of the 'empiricist as philosopher' as he expresses it, in direct contract to John Lock's under-labourer conception of philosophy.

This is surely the case in examining the language of skills. Armchair analysis may be necessary but it is not sufficient. Valuable progress can be made in my view, by interviewing employers in depth to probe their 'needs' and requirements and in particular (in this context) to examine the language in which their needs and demands are actually framed. One such study, albeit on a small scale, is reported in Wellington, and is summarized below.

It is clear a huge task to identify the 'needs' of employers in terms of the skill which they require of school-leavers and trainees. The range of employers will be so vast in terms of numbers employed, on-the-job skills, and the nature of employment that there may be no common ground. With this provision in mind, a pilot research project was carried out which involved detailed interviews with a small sample of employers from service industries to so-called high-tech employers.

The interview were conducted in a fairly unstructured way, although some specified questions were asked of all the staff involved. The person approached and interviewed was in each case the 'development and training' or personnel officer of the company. In fairness to those interviewed on specific comments and quotes will be included here-I will simply sum up some of the general principles which came through strongly, and also select some of the more interesting remarks on skills and specific training which relate to earlier parts of this paper.

The strongest message which came through in this pilot study is that the needs of these employers are not framed in terms of skills required of school leavers - their requirements are always stated in the language of attitudes and dispositions. This is perhaps the most important message as a response to 1981 and 1984 White Paper -they are making a basic 'category mistake' in framing the needs of employers and therefore of vocational education in terms of skills. What employers seem to be demanding of school-leavers and YTS trainees, is a collection of general attitudes and dispositions. The 'attitude' which came at the top of the list was 'interest and motivation'. This was felt to be the most important quality in a school-leaver. Other attitudes and dispositions considered important were: initiative, confidence, self-belief and maturity.

In none of the interviews were skills specifically mentioned. Each of the employers interviewed was asked which skills they required of new employers - non listed skills other than numeracy and literacy, which (incidentally) they felt were of the required standard in the young people they appointed anyway. The so-called high-tech employers were asked specifically about 'computer literacy'. Did they want their employees to be 'computer literate' before joining the company? This notion was dismissed. The kinds of 'computer literacy' (a virtually indefinable notion anyway they might receive before employment was not felt to be of use once they had joined the firm.

One rather depressing comment was made by a national high-tech employer, they suggested that school-leavers were not likely to be taken to the high-tech side of the industry at all. Recruitment to this facet of their company would be entirely at graduate level and above. Even then (incidentally) the graduates appointed would not necessarily be in Computer Science, who were often receiving training in the wrong computer language e.g. pascal rather than Cobol.

Some of those interviewed did comment, of their own volition, on the Youth Training Scheme. They saw YTS largely as a grading or interviewing system which enabled them to 'have a good look' at a prospective employee. They felt that it was an ideal opportunity to see if that trainee had the right attitudes and dispositions, such as those already mentioned. One described YTS as a 'year-long interview', a comment which has since been used by many employers.

I would not suggest that this small empirical enquiry with its small sample could be used to form any definite conclusions on the requirements of employers. However, I would suggest that the study does indicated a gap between the language used in statements and documents on pre-vocational education and the language in which employers and industry couch their requirements. In particular, the study posed the following questions. Should discussions and statements on vocational education be framed in the Callaghan language of 'skills', 'relevant training' and 'tools-for-the-job'? Or should the aims and philosophy of vocational education be couched in terms of attitudes and dispositions? Is there any sense in the notion of 'relevant skills' or 'skills for the future' in a society which may be entering a new phase? If not, then what meaning does the very notion of 'pre-vocational education' hold? With an increasingly uncertain future for employment, depending more and more on the rapidly changing field of information technology, does the notion of vocational training make economic, let alone conceptual sense?

These questions will be discussed in the final two sections of this paper, firstly by considering the likely 'skill demands' of new technologies and then by sketch-ing the response of Japan to the education and training needs imposed by technological change.

SKILL DEMANDS AND THE NEW TECHNOLOGIES

The 1981 campaign to install microcomputers in all of Britain's schools was accompanied by a wave of uncritical enthusiasm and a flood of rhetoric regarding its vocational significance. Kenneth Baker, the new Minister for Information Technology typified the political mood of the time.

> ...I want to try and ensure that the kids of today are trained with the skills that fathers and grandfathers jobs. It's like generals fighting the battles of yesteryear. And that is the reason why we've pushed ahead with computers into schools. I want youngsters, boys and girls leaving school at sixteen, to actually be able to operate a computer.

That optimism for the vocational significance of the computer permeated into many of the two million or more households which subsequently acquired computers, and largely caused the unprecedented growth of Computer Studies as an examination subject. The unquestioned connection between computer education and the world of work also surfaced in the plethora of books discussing the use of computers in schools. Mullan, for example, even drew a connection between primary children's use of the microcomputer and the use of the computer in the world of work which they must experience.

If children meet the microcomputer in an exciting and pleasurable role in school then one could argue that there is a greater likelihood of them accepting it as an aid in the world of work which they must experience in the future.

The unquestioned belief in the vocational significance of information technology also affected deeply both the thinking and the publicity associated with the two key innovations in vocational education: the YTS and the TVEI. Finn writing in Dale, discusses the publicity at the launch of the YTS which 'attempted to associate it with the new technologies at the forefront of employment creation'. This publicity has continued in the same vein with the advent of the two-year YTS, a publicity drive which is analysed in the following section. Similarly, the drive behind TVEI depended to a large extent on its perceived links to new technology and in extent on its perceived links to new technology and in particular to IT. Dale, in discussing the background to and inception as the continuing emphasis on 'high-tech' industry in the early 1980s. This in turn led to the belief 'that future employment prospects are likely to be most propitious in IT-based industry and commerce'.

This is a belief which requires thorough and critical investigation. The links between information technology in education and information technology in employment have never been fully and critically examined. There is simply an implicit and unquestioned belief in the minds of many people (parents, children, teachers and policy-makers) that IT education at any level will make its recipients more employable. That belief has provided the main impetus for much of the information technology education in schools, colleges and ITECs.

The purpose of an ITEC have been described by Smith. Their aim is:

> to provide young people with the new skills necessary for Britain to take a leading part in the technological revolution.

But what are these 'skills', and at which levels of education are they required? The question can be explored in two ways. Firstly, by considering recent documents and reports on the links between IT in education and industry. Secondly, by a full scale empirical investigation into the perceived 'skill demands' of employers in IT, their current recruitment patterns at various levels, and the relation of those demands to the range of IT educaton currently offered in our education and training schemes. An empirical investigation along those lines was launched in April 1986 at the University of Sheffield, and its findings will be published in full elsewhere. However the first method of tackling the question will be discussed briefly here, by considering two recent publications. A crucial document was published in August 1984 by the Economic Development Committee entitled Crisis facing UK Information Technology. This publication described the critical skill shortage in Information Technology which is apparently holding back the UK industry:

> Too often contracts are being lost, and employment opportunities lost with them, because of the lack of a few key engineers.

But at what level are these skill shortages? The answer given by this document is that the shortages occur at graduate level and above. For example:

> The problem is critical even before the effects of the University Grants Committee cuts have really shown in graduate output.

In other words (according to this document) the critical skill shortage holding back the UK 'Information Technology Industry' is clearly not at the level of 16 or 17-year-old school leavers who are likely to opt for the YTS. It is at the graduate level, of a 'few key engineers'. Skill shortages at this level, according to the document, are resulting in a lack of demand for the employment at lower levels. This is perhaps a more subtle version of the skills-deficit model of unemployment, i.e., lack of the right skills at graduate level leading to a lack of demand for labour at lower levels. This more subtle version of the skills-deficit model, however, is not even hinted at in the 1984 White Paper.

The EDC report also includes a passing criticism of vocational education and training.

> The UK has a multitude of institutions and agencies engaged in education and training but they appear to have difficulty in responding to the now very insistent signals from the market for skilled people and developing a consistent response.

But what 'signals' are being sent from the market for skilled people? What skills do employers actually require, or at least say that they requires? This is clearly a case where the rhetoric of skills and skill demands needs to be transacted into reality. Clear signals are needed from employers so that education can be expected to develop a 'consistent response'. There can be no substitute for empirical investigation here.

A second key publication in predicting the 'skill demands' of new technology is the report of the Alvey Committee on the future of IT and so-called fifth generation of computers. This vital report is given further consideration in the next section, but its major themes can be introduced here. A large proportion of the report was devoted to the education and training which would be needed to provide the human resources for Britain's advanced information technology programme in 1990s. Perhaps the crux of the whole report for the future of education in IT is contained in one short statement: 'Information Technology is knowledge intensive. The addition of skilled personnel for Britain's advanced It programme is quantified by Alvey in terms of thousands, not even tens of thousands. At what level are these personnel required? Alvey suggests that 'urgent action is needed in the higher education sector'.

> Restrictions on expenditure in higher education ,whatever the intentions, have tended to fall across the board. It has not escaped.

So what action can be taken for students in the 14-18 year old range of education and training? Alvey's response is one of the most quoted sections of the report:

> .....it is no good just providing schools with microcomputers. This will merely produce a generation of poor BASIC programmers. Universities in fact are having to give remedial education to entrants with A-level computer science.

Where does this leave the emphasis on 'information technology skills' and 'computer literacy' at the heart of YTS schemes, the ITECs and the new TVEI? My own view, which I have argued elsewhere (Wellington 1985a), is that education (not training) in and through information technology should be seen as a valuable end in itself. It can enhance traditional educational aims but should never replace them. The vocatonal significance of IT has for too long been overemphasized or, indeed, 'hyped up' by the media, by politicians and even by parents. The best way in Which education can support the essential growth of IT in Britain's economy is by providing a sound general education for all pupils. This is precisely the pattern in the education system of Britain's Eastern competitor in IT, Japan.

LESSONS FROM THE EAST: THE JAPANESE APPROACH TO SKILLS AND VOCATIONAL EDUCATION

A full-page advertisement began to appear in the newspapers early in 1986, from The Mirror to the so-called quality dailies such as The Guardian. The advert warned the Japanese of the advent of Spikey Dodds, Tracy Logan and others with names like Joe Bloggs, about to embark on the new two-year Youth Training Scheme, Spikey Dodds, for example, will 'begin his course by trying out several different skills before he chooses the one he'll train through to the end of the second year'. By the end of this course he will have 'a skill, a certificate to prove it, and a better chance of getting a job'. This may well prove true, though as yet there is little evidence to support such optimism. But the point I would like to take issue with comes in the next paragraph of the advertisement:

> Our competitors in the Far East and Europe have been training their young people like this for years.

Presumably, one of the countries implicity referred to here is Japan. The suggestion, therefore, is that Japan's education, system has been training youngster's by allowing them to 'try out several different skills'before choosing the one which they will train for and obtain a certificate in. This is patently untrue, and I will not need to exhume publications from university libraries to prove it. A series of articles on the evolution of Japan's education occurred in Look Japan from May to December 1983, These articles, written by leading Japanese economists and educationalists, indicate that the skills-based vocational training alluded to in the YTS advert may have taken place in the 1960s and early 1970s but has now been superseded by a totally different educational drive.

> School education now provides both general and vocational courses at the secondary level, but the general public tends to regard the former as preparing intelligent youths for university entrance and accordingly for better employment opportunities and the latter as accommodating the less intelligent who are to enter lower level occupations. Industry generally expects schools to turn out youths with a good level of academic achievement and adaptability and does not attach much importance to pre-employment training designed to prepare young people for specific occupations.

The first sentence of this paragraph gives an early warning of the potential divisiveness of vocational curricule, discussed five years latter in Times Educational Supplement articles on studies of the new TVEI. The second sentence indicated that the world's most successful industrial nation would encourage its youth to follow a general education rather than vocational training in the 1980s. This view is made crystal clear in the document:

> ...the emphasis (in school education) is on developing general intelligence rather than specific skills.

The 1981 statements have since become reality. In 1985, no less than 94 per cent of Japanese students stayed on for 'senior high school' after leaving the compulsory junior high school.

Despite Government effort to make work-related courses more attractive to students, the vocational high schools are still generally viewed by pupils, parents and employers as being second-best. The demand for place at vocational schools has declined, and many entrants are students who have failed to gain entry to a general high school.

Such eduring attitudes are coupled (both as a cause and as an effect) with the huge growth in Japan's highest education, sometimes called its 'transfer to a higher education society'. The proportion of the relevant aga-group staying on for higher education in 1985 was just under a remarkable 40 per cent compared with just over 20 per cent in the United Kingdom.

An important part of Japan's higher education in ensuring its industrial success was, of course, the high-level engineering education provided. At the start of the 1980s Japan's total output of graduate engineers was between five and six times higher than ours at about 75,000, compared with Britain's 13,000. This poor comparison still continues at a time when Britain's information and manufacturing industries are desperate for electronic, electrical, mechanical and software engineers at graduate level.

Britain's principal area of competition with the Japanese in the next decade will almost certainly be in the area of information technology. The Alvey Report indicated Britain's needs for the future.

> .....there is a requirement for a new breed of information engineer' with a wide understand ing of the potential application of IT to indus trial needs. The supply of graduates with skills relevant to IT must be increased. The under graduate output is currently some 6,500 per year. This is wholly inadequate to meet our future requirements.

HOW HAS BRITAIN ANSWERED ALVEY'S PLEA?

The central response to the keenly felt need for IT education has been to provide every school in the country with at least one computer and some with as many as thirty or forty. Britain's populance now has the largest number of home computers per head in the world. This is in direct contract to the Japanese approach to computer education. The 1984 Japan Educational Journal reported that only 0.1 per cent (i.e., on in a thousand) of its primary schools had microcomputers at that time, Less than 2 per cent of its lower secondary schools had computers, though the figure reached 45 per cent in its upper secondary schools. However, the computers in the latter area were used largely as an administrative and management tool. The motions of 'computer studies' 'computer literacy' and 'computer-related skills' so widespread in this country, have no place in the Japanese approach to education:

The school curricula in Japan are designed to give children a broad and basic knowledge which is necessary in order to grasp and enjoy a wide range of ideas and activities. In the field of science and technology, Japanese children are taught concepts, principles and laws of basic science and mathematics, which are the basis of industrial technology. Computer technology is not yet considered to be part of the required 'basic knowledge'.

It seems that the abacus is a more common learning tool in Japanese schools than the computer.

I am not suggesting that we should attempt to copy Japan's approach to computer education, or its education system in general. Britain's culture, its hidden curriculum and its material resources are too vastly different to make that a possibility. I am suggesting that we should radically re-think our approach to vocational educaton in the light of lessons learned from the Japanese, and in view of our need to compete with Japan in the development of new 'knowledge intensive' industries.

It makes little sense to base a new and expensive programme of skills-based vocational training on a view of a system 'in the Far East' Which is at best out-dated and at worst purely fictional.

Chapter-5

Vocationalism And Education

Education has always been intimately connected with the world of work. Early impulses to provide schooling for the masses contain a mixture of motives but all them take-cognizance of the social reality of employment. On the one hand humanitarian instincts promoted compulsory schooling in the early years of the nineteenth century a means of liberating children from the heartless depredations of what amounted to little more than slave labour. On the other hand, later in the turbulent years of revolutions and the widening franchise as note of 'education for our masters' was to be heard, schooling as a means of 'gentling the masses'.

In the twentieth century the ideological currents of egalitarianism, notably in the writings of R.H. Tawney, introduce a levelling function into the debate about schooling. Here for the first time in the public sector schooling is not just to follow a religious or secular social order but to act as a reforming force. The invention of meritocracy in the mid twentieth century is a dramatic step towards the fulfillment of schooling as a power of social change. In such social change what work people are to do is at the centre. Harold Wilson's concept of the comprehensive school as providing 'grammar school opportunities for all' - clearly meritocratic in itself-was a step towards a concept of a common curriculum for a common culture.

What this latter formula lacks is a clear recognition of social inequalities prevading the culture, most importantly perhaps in inequalities in access to work and its highly differentiated rewards.

It may well be doubted to what extent we have a common culture, so far are we divide on lines of class, race and region. Our recognition of these factors has been heightened by the increase in wordlessness which has been clearly patterned along class, race, gender and regional lines.

In the 1980s, therefore, we are faced with the problem of redefining the relationship between schooling and work. We are helped in this by the legacy of all the experimentations and therorizing that went on through the 1960s. At the time it became possible to a articulate a concept of education which separated it from narrow instrumentalist and saw it as an end in itself. To be sure this was not new to human history for Dewey had long ago expressed the idea that the only true aim of education was more education - but in an American context where there was no doubt that schooling served a democratic social order, albeit one which was rapidly developing on competitive and capitalist lines.

The question then is not whether schools should serve society, but how? The philosophizing of the 1960s developed a purist conception of education as the pursuit of personal autonomy based on reason. This lacked a responsible account of the social and economic relations necessary for that purpose. In that way it mirrored the separation of the education service, and teachers particularly, from social audit. As economic and ideological stringency set in during the 1970s this separation broke down to the point of mistrust and disillusioned. Two political events may be seen as symbolic of these developments: the abolition of the Schools Council, which was one of Sir Keith Joseph's early measures, and the creation in 1974 and subsequent growth of the Manpower Service Commission. These two developments attacked the values held by the education service and called them to account for the part education should play in the social order.

Unfortunately this accountability, though necessary (for what democracy ought to tolerate vast unaccounted-for expenditure?), has been converted to its own ends by a narrow range of interests from the world of business. Aided by a businessman's government business and industry have been holding education to account. The next step in the evolution of education as a public service is surely to widen the interests to whom education is to be legitimately accountable. Already, for other reasons, parents are coming to the fore and we may well be seeing the creation of counter force to the assumption of industry.

Among these assumptions have been the following:

1. Education principally concerns the pupils' preparation for a world of work;
2. This preparation should concern itself with the 'skills' industry needs;

3. These skills are mainly technical in nature;
4. Schools have perpetuated an anti-industrial culture;
5. Schools have neglected a substantial minority ('the bottom 40 percent') in favour of an academic group of high fliers.

All of these assumptions, and more, may be called into question by the arrival of new interests on the accountability scene. Parents and governors who get to know the work of the schools intimately will certainly realize that schools can hold out the view that there is more to life than earning a living. What, after all, are we to do with the wealth created by work? As curriculum reform goes on, some of it motivated by criticism such as the above and some of it springing from other sources, the questions will be freshly formulated and we may go some way to asking on what principles an educational curriculum which is also socially responsive may be defined. A suspicion of an answer is that no permanent theory for all this is possible. Instead we should look for a balance of interests in which the recent swings of the pendulum from teachers to industrialists are held more in check by a continuous process of social negotiation in the developing institutions of schooling and government.

The purpose of this chapter is to suggest a broad set of considerations for those concerned with the development of curriculum. Its central theme is that 'education' and 'preparation for work', however broadly defined either or both may be, are not synonymous terms. It will be argued that if there are attempts to convert education to the interests of business or commerce these must be regarded with a critical eye lest other equally legitimate interests in education are consequently devalued. The critique of education from a vocationalist standpoint in recent years has been unhelpful to the improvement of the school curriculum because it has focused attention on too narrow a form. This paper indicates some broader considerations.

It is in no part of this thesis that any particular moves are in fact being made, nor that there is any actual conspiracy to being the education service under the control of business. Those are exceedingly difficult empirical questions which others are addressing. Equally, however, the thesis is not the purely conceptual or linguistic one that the two terms have different 'meanings'. It is not proposed that the content and structure of an 'educational' curriculum can be derived in some a priori fashion from an analysis of the terms involved in discussion about it, for example, by contrasting 'education' and 'training'. Though these terms are indeed used to pick out distinctions among practical activities, reliance is better placed upon ordinary human wishes for young people. It will be important therefore that curriculum planning is conducted in such a way that these wishes are not obfuscated by ideology. Centralist tendencies carry this danger and it will be suggested that curriculum planning should be developed as far as possible to the grass roots level.

In the end, to uphold such a view of curriculum planning is to espouse a value position which has political as well as curricular implications. The message for innovators and curriculum developers will be that personal and professional responsibility demands that full account be taken of the historical and moral dimensions of their work. Relevance to 'work' or 'the economy' must be set against and balanced with the perhaps less easily articulated values contained in the preference of parents and others for their children. The new school governing bodies-since they will contain a majority of people with a direct personal stake in the curriculum of their school-present an opportunity for this form of resistance to distant dogma.

Rather than philosophically defining terms, it is important for this form of argument to inspect the substantive ends that education may from time to time be called to serve. This is so not only because philosophical analysis tends to carry little weight in the practical world but also for two other reasons. Firstly, philosophers do not agree among themselves on the issues; secondly, and connectedly, philosophy is not value-free enquiry which, if only it could be perfected, would provide the answers to social and moral questions. The work of the philosophers of education in the dominant Peters tradition has been subject to enough scrutiny to establish that a specific educational position is contained within their endeavours. The whole form of work that this genre of philosophy of education represents goes towards reinforcing an academically oriented school curriculum.

The initial question before us in this enquiry is what alternatives may be specified as the ends of education. The bid from vocationalists has to be seen as not the only alternative to intellectual elitism; too much of the debate has been polarized between these to alone. The deficiencies of our secondary education have been exceedingly well rehearsed and practically nobody denies that the secondary curriculum needs overhauling. How far academic values are to retain their central place is, however, a matter of some contenting.

A first riposte to the vocationlist thrust, one dismayingly seldom seen, would be to accept the criticism that schooling has failed perhaps the majority of pupils but to say that this is no reason for rejecting the view that school is primarily about the virtues of the considered life. Are formed, well resourced with; it should be detached as far as possible from the ragaves of a competitive examination system and the straightening effects of subject-mindedness. This move would preserve the centrality of mind without elevating mere cleverness as an organizational criterion, for example, by rejecting streaming and setting without good reason. General education would be reinstated as the purpose of the compulsory school years. Perhaps the most urgent challenge for such a position is to incorporate practical and expressive activities in a tradition of education which is predominantly concerned with the abstract and theoretical.

This move is perhaps too obvious to have achieved much attention yet it is something of the kind the HMI have been propounding in their various publications since Curriculum 11-16 and A View of the Curriculum. These documents have consistently put forward a counter view to that contained in the parallel Ministerial publications. In A Framework for the School Curriculum and in the subsequent more muted publication, The School Curriculum, for example, there residues no discernible overall view of curriculum design. They are concoctions of the obvious, reflecting only an uneasy consensus of the ill-informed and responding to the political preoccupations of the hour. As such, they are of course along. It is noteworthy, too, that despite obeisances in the direction of the world of work such proposals are bereft of specific curriculum ideas in that direction. This is surely because the conceptual apparatus being deployed is limited by the rather narrow educational experience of politicians themselves. It is predominantly the subject-based curriculum which is assumed in such proposals and this curriculum has the greatest difficulty in articulating a coherent response to cross-curriculum initiatives. There is no traditional school subject called 'the world of work' and thus no clear views are forthcoming on what it could represent in the curriculum beyond generalizations of a saloon-bar nature about 'the basics' and the 'will to work'.

As it is, then, the popular rhetoric has it that Britain is an industrial country with an anti-industrial culture; the educaton service does little to rectify and may even be responsible for this state of affairs. But these assertions are linked to no historical explanation why Britain became preeminent industrially and otherwise in the first place, nor to the role of the education system in that ascendancy. If there were some such analysis we might have more confidence in the capacity of education to contribute to prosperity as well as benefit from it. The suspicion must remain that, historically, the origins of industrial success lie well outside the education system, in factors such as maritime access to imperial markets. By the same token it might be thought that the seeds of late twentieth-century economic renewal may well lie equally distantly from the schools, for example, in the movements of international capital. If in the nineteenth century the contribution of the school was to provide a docile labour force in turbulent political times, then perhaps today's role for the schools is, minimally, in being seen to respond to economic crisis and unemployment. In regard to schools, politicians can be seen to be doing something, sometimes with the added frisson of censoriousness.

But these are big if and it is not to the present purpose to claim they are true. They are raised only o suggest that the relation between the schools and the economy is both multifaceted and essentially contested. Because it cannot be contended that this relationship is clear in a casual, or in any other, way it makes little sense to claim that the schools are responsible for economic decline or that the economy can be turned round principally by education reform. Nevertheless, the educationists are in receipt of regular accusations that they subvert the aims of industry, from pre-school to university, mainly by failing to emphasize technological subjects, by failing to foster the entrepreneurial spirit and by indulging in the luxury of individualism at the expense of discipline and team work.

The effect of this undifferentiated mass of complaint is to imply that the alternative to the curriculum as it is - and we have acknowledge its defects-is a curriculum geared to the 'real' world of work. And this despite the poor theoretical background and the paucity of though going suggestions for curriculum reform-apart from spectacular but essentially marginal assaults on the system such as TVEI.

But these are not the only alternatives. Indeed, at a time of high unemployment, and unemployment among the young in particular, it would seem logical to contemplate an education for a wordless future. This, however, is plainly not a political possibility and no political party has dared to mention it. Because it is so inconceivable we have hardly any indication what such an education would look like. It would certainly not be the same sort of a thing as education for leisure, for leisure constitutes a range of activities defined as such by contrast to work in precisely the same way treat holidays make sense only when there is something to go back to afterwards. A workless culture will necessarily redefine what it takes less seriously as constituting the essential tasks of life and what it takes less seriously as perhaps being recuperative or playful. Since we cling to paid employment as the source of social identity, financial sustenance and personal dignity, we are unable to contemplate a workless future whether for ourselves as individuals or for us all socially. Thus education cannot be conceptualized in this dimension and is apt to degenerate into education for leisure. Education is indeed a vision of the future and curriculum plans can only be made on the basis of what we are able - and willing - to see of the future.

If education for worklessness is a more logical and education for leisure a more likely response to the modern situation we should not be ignoring other aspects of adult life for which education should be prepared. It is predictable that the vast majority of pupils will become parents. Yet despite James Callaghan's emphasis on the family at the outset of the great debate ago this aspect of the responsibility of the education service has received scant attention in the ensuing rush to vocationalize. It is tempting to ascribe this neglect to some deep intuition that the family is potentially at least a centre of resistance to social engineering. What close-knit family would be prepared to see its members dispersed nation- and Europe-wide in fulfillment of the supreme imperative of work? But the family itself is in crisis, a crisis certainly in part due to an undermining social, political and economic environment. Education for parenthood ought to equip people to understand their predicament as parents in such terms, enabling them to act in defence of the family as an institution as well as in the interests of their own family as a unit. As it is of course, education for parenthood degenerates to child care without reference to its social context. It is hardly likely that there is need of a conspiracy to suppress the family in this subtle way, by reducing it to hygiene and sentimentality, when we are all in general so limited in our understanding of what the family could represent in the social structure and in our personal lives.

For much the same reason community education also fails to gain a real grip on the mainsprings of curriculum development which remains torn between academic and vocational emphasis. Much energy and ingenuity has been expended on community education but these endeavours have consisted mainly in attempts to share school facilities. There is little sense of what communities might become; and insofar as efforts remain at the technical level there is little prospect of educational action pragmatically clarifying possibilities.

As well as exercising the role of parents and as well as inhabiting a local community, all pupils will also be members of a political form of life we call democratic. Citizenship, equally with parenthood and community membership, has been much neglected and mis-rendered goal of the curriculum development movement in recent years. There are few attempts to relate knowledge of the forms of government to the levers of political power. So in schools the old civics and British Constitution survives; there are picture que role playing in the shape of school councils and moots; but the skills of participation and the exercise of personal and community rights receive scant attention. To go beyond the costly descriptive is for schools to court the charge of mixing education with politics. Here the academic tradition of neutrality is seen as a disease preventing the positive engagement of young people in the political culture. The proposals in the 1986 Education Bill to bar pupils from membership of their own school governing bodies is a symptom of that fear of political activity among young people and in or near schools that has nullified even the most legitimate of programmes such as that proposed Crick and Porter. It seems that in this greater than the fear of the consequences of ignorance. Political breakdown and disorder is surely a more likely eventuality than economic bankruptcy; moreover, it is an area where appropriate teaching could directly affect the quality of judgement the citizen deploys. This is certainly a more likely educational contribution to the collective quality of life than the purveying of dubious employment-related 'generic skills'.

In the closely-related field of economics it is truly significant that calls for education to prepare pupils for 'the world of work' include only nostrums of the 'there are no free dinners' variety and contain no invitation to critical economic literacy. That there are a number of theoretical ideas about economic growth, all with different policy implications, is to be forever unknown to the majority of people who will make their political choices on the basis of personalities and slogans only. School, which for very many will be their only exposure to a critical consciousness, will have been in direction of an educational duty. The conflict between educaton and vocationalism will have claimed another casualty in the middle ground.

The educational imperatives from the family, from the community, from citizenship and from economics have all suffered neglect or suppression as a result of the vocationalist assault on the curriculum. These modern concerns threaten to go the way of those older curriculum aims - Christian salvation and gentlemanly cultivation - in the struggle between ideologies of the education system can be free of social and political assumptions concerning the distribution of power and the nature of the good life. When national economic survival is postulated as an overriding priority it will be important to ask 'survival in what form?' Which distinguishable interests will be advantage and which disadvantaged in any new settlement? Reference to Raymon William's threefold classification of educational interests - the industrial trainers, the classical humanists and the public educators - may be complemented by Salter and Tappar's state bureaucrats as a basis for such enquiry. There is an urgent need for research in the real politics of educational policy. Such research, of which Broadfoot's is the best recent example, could help us to discover the centres of educational influence at national and local levels and thereby to learn how deliberation might be opened up to wider constituencies.

Such is the overwhelming strength of the vocationalist impulse that deliberation over the curriculum has been severely curtailed in recent years. It is surely now time to review the direction educaton is taking, and a start should be made by considering the adequacy of the forums within which educational policies and initiatives are generated.

Since the demise of the School Council there has been no independent body wherein curriculum development could be promoted. Despite its well documented shortcomings, its labyrinthine committee structure, its failure to produce a 'whole curriculum' policy, and its apparent lack of 'take-up' in the schools, this was the nearest we have seen to a research and development agency holding the ring between the many diverse interests in education. Its successor bodies, the School Curriculum Development Committee and the School Examination council, are not representative of those diverse interests and respond principally from the centre to the political imperatives of the day.

The proposals in the 1986 Education Bill to do away finally with the old Consultative Committee which contributed so much intelligence to policy making over the years is perhaps another symptom of the flight from independent advice which has characterized centre over the past few years.

In this situation the professional vogue for school-based curriculum development is likely to be restricted to the realm of technique against a backdrop of structural decisions on the curriculum taken centrally. If curriculum is to be rescued from the truncations of vocationalism it can only be hoped that the LEAs will exert themselves and set up their own curriculum development agencies. These should be based on a genuine collaboration of local interests using a disciplined form of enquiry and resulting in clear statements of policy for the whole curriculum. Such statements are not to be confused with prescriptions for detailed curriculum content. It is rather a matter of establishing an agreed working rationale against which practitioners, governors and education committees themselves may make judgements on future developments in the light of experience. The power of the LEAs has been greatly diminished since local government organisation in 1974 but they could surely redeem their educational souls by taking seriously their responsibility for the curriculum in concert with governors and teachers.

In doing so there would be a strong tide to swim against.The flow of events is increasing in one direction, from central to local and then to school level. Centralization is of course a separate question from that of the desirability of the messages that are sent. In the professional mind, though, centralization is inevitably bound up with the vocational trends of recent years. Given the central government's legitimate interest in the economy and in manpower planning it is likely that only the coarser-grained messages will come through that channel. All the more reason, then, for LEAs, governors and teachers to mount their own curriculum initiatives, preferably, in concert at the local level where they can be enacted, monitored and improved.

The urgency of this is not simply in defending more sophisticated and locally responsive curricula. More, it is a matter of reserving and furthering the art of curriculum making at the scene of its transmission. If teachers are not to become a mre'delivery system' of curricular goods defined at the centre, local exertions are necessary. The new machinery for INSET will need to be used not solely for short-term system maintenance or so as to be seen to be applying central priorities, but also to research more distant goals and more adventurous possibilities. The contractual relationships implied in new forms of teacher appraisal will need to be moderated by a spirit of collegiality. Above all, the deleterious effects of rush must be minimized. Of course there is urgency; but the strongest impression left by the last ten years of curriculum initiatives is one of too many answers chasing too few questions. This form of educational inflation has depleted energies throughout the system and eroded reserve of educational commitment which badly needed renewal. The kind of local activity suggested here, albeit having to work against a prevailing climate, would be a means of introducing a desperately needed and greatly desired quantity of deliberation into a curriculum development process marked of late by destructive haste.

Curriculum making restored to the local level as a participatory and collaborative activity would discipline the rampant and ideological vocationalism proposed by elites for the children of others. It would achieve this by setting employment prospects in their proper context, namely as important considerations among the full range of desires we all have for our children. We wish them to become good parents, full members of the community, thinking citizens and critical participants in an evolving democracy. We wish them to be happy. Set in this context all sorts of employments, themselves stand a chance of being revalued for their contribution to a well-lived life.

APPENDIX

A commitment to vocational education and training

The system of vocational education and training in the Federal Republic (West Germany) is one which has attracted a great deal of attention from British observers, and, as a consequence, has been frequently examined by visitors-including politicians, industrialists, civil servants and educationalists-and just as frequently reported on. The reason for our consuming interest in the Federal Republic's provision of vocational education and training is not far to seek: the 'economic miracle' which had led to West Germany raising itself from the rubble of the immediate post-war period to become the most prosperous and economically powerful country in Western Europe must surely, it is said, have something to do with its system of vocational education and training? As the United Kingdom's industrial position and prosperity relative to other developed countries have declined, so that of Western Germany have increased. By 1980, for example, as Professor Prais has pointed out, output per employee in manufacturing was some 50 per cent higher in West Germany than the United Kingdom and real income per head of the total population was about a third higher. At the same time West Germany boasts a much comprehensive and seemingly effective system of vocational education and training, so that it is natural to assume that the former state of affairs derives, inpart at least, from the latter.

The Federal Republic of Germany is, of course, a creation of the decade after the Second World War. It grew out of a fusion of the three zones occupied by the American, British and French armies of occupation and became a sovereign independent country on 5 May 1955. With the exception of West Berlin, which is an outlier embedded in East Germany, its territory is contiguous and is made up of 11 Lander, or state: Baden-Wuttemberg, Bavaria, Berlin, Bremen, Hamburg, Hessen, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland, and Schleswig-Holstein.

It occupies an area of almost 250,000 square kilometres and has a population of just over sixty-one million, of whom 49 per cent are Protestants and 44.5 per cent Roman Catholics. Over four million foreigners are living in the Federal Republic at present, of whom almost half come from Turkey and most of the rest from southern Europe. The size of the population within each Land varies considerably, from about 700,000 in Bremen to some seventeen million, or more than a quarter of the country's total population, in North-Rhine Westphlia. Its economy is predominantly an industrial one, based on coal-mining, iron and steel, machine construction, electrical and metal products, and the processing of food stuffs.

THE SOCIAL AND EDUCATIONAL BACKGROUND

The Federal Republic today is a stable democracy with a federal constitution which lays down the division of power and responsibility between the Federal Government in Bonn and the administrations within the eleven Lander. Thus, the federal constitution bestows upon the latter, 'cultural sovereignty' which as far as education is concerned, gives them primary responsibility for the provision of primary and secondary schooling, with the partial exception of vocational education. Indeed, it was not until the late 1960s that a Federal Ministry of Education and Science was established. This system of government represents little change from the past as West

Germany has never had a centralized and uniform educational system. However, it is important to understand that each Land has a highly centralised power structure which applies to education equally with other aspects of provincial government.

In general, West Germany is both an ordered and orderly society in which most aspects of economic life and educational provision are determined by detailed laws. It has developed a tradition of 'consensus politics' which is based, among other things, on middle-of-the-road Federal Governments, and an elaborate body of constitutional law enforced by a powerful judicially on both the executive and the legislative. In this context there is general agreement about the importance of vocational education and training, which has long been regarded as an integral part of West German life, and about the parts to be played in its provision by the Federal and Lander governments, by employers, by trade unions, and by the individuals themselves. Education is highly regarded and is seen by many as the principal means of bettering themselves.

The school system, which is relatively simple, has to British eyes, a somewhat old-fashioned appearance as, at lower secondary level, selective schools are predominant and comprehensive schools the exception rather than the rule. Although there are slight difference in organisation and structure between the individual Lander, the basic school system is broadly similar across the country, being divided into three stages: primary, lower secondary, and upper secondary. There are nine years of compulsory full-time schooling from 6 to 15 in most Lander, with ten years in a few. In addition as we shall see, all West German pupils have some form of compulsory education or training up to the age of 18. Moreover, the compulsory period of schooling is preceded for more than three-quarters of the pre-school population by attendance at Kindergarten, whose numbers have grown very considerably in the past twenty years. The primary school, or Grundschcule, comprises Grades 1 to 4, ages 6 to 10 years, everywhere except in West Berlin and Bremen where it covers Grades 1 to 6, that is from 6 to 12 years. Like primary schools elsewhere, those in West Germany have not been without their problems. These include the procedures for selection for the different types of secondary school which in the past have often been very rigid, bringing pressures upon children and teachers similar to those associated with the formerly widespread 'eleven-plus' examination in the United Kingdom. However, in recent years the transition to secondary schools has become more flexible with the introduction in the first two years of lower secondary school of what are variously described as 'probationary', 'observation', or 'orientation' stages (Orientierungsstufe). Their function is to leave open the decision about what the pupil will do next until the end of the sixth grade and then reach this decision on a reliable form of assessment. In many parts of the country, primary schools have had to accommodate substantial numbers of children of foreign workers, Gastarbeiter, and many of them have been less than successful in providing multicultural and bilingual programmes for these children.

Once youngsters have competed their four years of primary school, they move on to three types or selective secondary schools: the Hauptschule, or roughly equivalent to the British secondary modern school; the realschule, or intermediate school, and the Gymnasium, or grammar school. The Hauptschule, which caters for about 45 per cent of the 10-15 or 16-year-old age group, is a five-or-six year school which takes those children who are unable to obtain places in the other types of schools. It has been in decline for some years and inevitably finds itself, especially in the urban areas, with the most backward and most deprived West German children, including a high proportion of the children of the Gastarbeiter. Numerous attempts have been made by the Lander to revise the Hauptschule, for example, by means of curriculum reform and by the introduction of a school-leaving qualification which is recognised as equivalent to the Realschule diploma, but these have not been very successful.

On the other hand, the Realschule, which now caters for over 20 per cent of the age group, has expanded its position over the past twenty years as an alternative selective institution to the Gymnasium. It offers a four-year programme, from age 12 to 16, and its increased popularity is due partly to the fact that its curricular, emphasizing science, mathematics and modern languages, is increasingly popular with pupils and parents who see it as a good preparation for later employment or higher education; and partly because the educational opportunities for those completing the Realschule have greatly increased. It has proved particularly attractive to children of working-class parents who are deterred by the more elite aura of the Gymnasium and who prefer the more practical curriculum available in the Realschule.

The Gymnasium, which caters for about one-quarter of the age-group, is a nine-year school, from age 10 to 19. It has changed dramatically in the past twenty years or so, both in the social composition of its students and in the curriculum which it offers. Its main function has been, and remains, to prepare students for entry into higher education, principally via the Arbitur, the graduation certificate which entitles the school-leaver to study at the university. Moreover, the changing nature of the Gymnasium in recent years means that it is no longer as highly selective as it once was; indeed in some suburban areas it enrols as much as 50 per cent of the age cohort. In North Rhine-Westphalia, for example, its most populous state, the school population fell from 3.4 million in 1975 to 2.7 million in 1985.

Finally, in a few of the Lander there re comprehensive schools, Gesamtschulen, which cater only for about 3 per cent of the schools population, compared to over 900 per cent in the United Kingdom. Their geographical distribution is very uneven and they are mostly concentrated in the politically less conservative states, namely those with Social Democratic governments, such as West Berlin, Bremen, Hamburg, Hesse and North Rhine-Westphalia. The reasons their supporters put forward for their introduction are similar to those in the United Kingdom: that they are a means of provising equality of educational opportunity for all youngsters, that they enable more young people to develop their full potential, and that they promote co-operation and citizenship among all strata of the society. However, their introduction has aroused considerable controversy and has been held up by legal and other impediments. Moreover, even in areas where there are comprehensive schools, a Land must provide the other three types of secondary school in order to ensure that parents have a full choice; this frequently results in the 'creaming off' of the most able students into the Gymnasium.

In addition to the four types of public secondary schools described above, there is also a variety of Special Schools which cater, for instance, for physically or mentally handicapped children. These schools accommodate about 5 per cent of the age group. In addition, there is a relatively small private sector of education.

Before examining the provision of vocational education and training which becomes available for youngsters after age 15 or 16, it is important to consider how far their school-leaving attainments provide a sound basis for this subsequent training. In this regard the acquisition of mathematical ability is clear significant, and it seems indisputable that West German standards are higher than those in the United Kingdom, and that youngsters leaving all the four types of secondary schools have a greater mathematical capability than their equivalent in the United Kingdom. Moreover, about 90 per cent of all school-leavers obtain a school-leaving certificate appropriate to each type of school, requiring minimum attainments in core subjects such as mathematics, science, German and a foreign language. As a consequence, it can reasonably be concluded that the 'schooling stage' in West Germany provides a better foundation for later vocational training than its British counterpart. It also offers a broader curriculum and significantly higher levelws of attainment in core subjects, for a greater proportion of pupils.

West German schools also provide more pre-vocational instruction than do their British counterparts, in the form of programmes known as Arbeitslehre, or Education for Work, which have been introduced into schools in all parts of the Federal Republic. However, they have been confined to the Hauptschule and Gesamtschule, and in practice are largely restricted to children of working-class parents. They are essentially pre-vocational in character join that, although they include a period of work experience, they are not designed to provide job-specific training. Their official aims are ambitious and include the provision of a general vocational educaton to enable youngsters to find an adequate profession, the promotion of vocational and professional flexibility, and making young people aware both of the nature of employment and also of their role in the home and in society at large. Arbeitslehre replaces former subjects such as woodwork, metal-work and needlework; however, the precise form which it takes varies from one land to another. Unlike many school subjects, it is not tied to one related area of learning, economics, social sciences and home economics. In this respect, it bears some resemblance to the Technical and Vocational Education Initiative (TVEI) programmes which have been introduced into British schools in recent years. However, the latter are designed for youngsters aged between 14 to 18 of all abilities, while Arbeitslehre is provided for the 13 to 16 age range, very largely for the lower half of the ability range.

Arbeitslehre has been particularly well developed in West Berlin where compulsory education continues to the age of 16, and it compromise a general course in such subjects as basic work techniques, typewriting, the reading of technical drawings, consumer information, bank accounts and family budgets; a choice of option from among mechanical technology, electronics, textiles, and household subjects; and career guidance, including talks by local personnel officers and visits to local places of employment. Elsewhere, where compulsory schooling ends at 15, Arbeitslere may be obligatory only for the last three years and somewhat less time may be devoted to it the practice in West Berlin.

Inevitably, the introduction and evolution of

Arbeitslehre have not been without their problems, including the difficulty or organising the programmes over a range of school subject and ensuring that teachers have the attitudes and knowledge to teach them effectively; and the administrative complications of organising work placements in factories and business. While properly organised programmes of Arbeitslehre, tailored to the needs of individual students, have much to offer them-for example, in improving their motivation in mathematics and other school subject areas-they do require a high degree of co-operation between those concerned and hinge upon the difficult task of properly integrating the various components of the programmes. Moreover, to work effectively they require special methods of instruction including projects, and the production of goods for sale and even services in the form of repairs and information, which in turn require specific teaching techniques from the rooms. Clearly, therefore, the implementation of effective programmes. Arbeitslehere will require more money than traditional school subjects. As they are patronized very largely by lower ability children in the Hauptschule, it remains to be seen how much public support they will command.

THE PROVISION OF VOCATIONAL EDUCATION AND TRAINING

In the Federal Republic, the vocational education and training of youngsters to produce skilled workers takes place once they have completed their general education at school. Thus, for the majority who leave school at 15 or 16, two types of vocational training are available. The first is the celebrated Dual System which most youngsters of this age embark upon, whereby as apprentices they combine on-the-job-training in industry or business with part-time, compulsory attendance at vocational schools until the age of 18, and the second consists of attendance at full-time vocational schools, which have been growing in popularity in recent years.

The much admired Dual System is the classic way by which the majority of West German school-leavers enter into a vocational training programme. It is characterized by two major features which distinguish it from most vocational training systems in other countries, such as the United Kingdom. First, as we have seen, training is split between two instructing parties: the employer and the school. For one or two days a week they attend state vocational schools, where they combine general education with the theoretical underpinning of their vocational subject, and for the rest of their working weed they acquire practical skills at their place of work. Second, as is apparent from the foregoing description, vocational training takes place to a considerably greater extent in the workplace than in school.

This system of apprenticeship, not unlike that in the United Kingdom which combines workplace experience with day-release to the further education college, though of course in a much smaller and less systematic scale than in West Germany, has very deep historical roots going back to the guilds and the master-apprentice relationships of the Middle Ages. It depends for its success on the willing co-operation of four major parties: the Federal Government, the Lander governments, the employers, and the trade unions.

At present, about two-thirds of all young people in the 15 to 18 age group participate in the Dual System, which overall caters for about 1,80,000 trainees. During the course of 1986, for example, over 700,000 new trainees were accepted as apprentices, 40 per cent of them girls, in no fewer than 500,000 training firms, approved for this purpose by the Federal Government. These youngsters were training for some 430 different trades in 13 broad categories, although they were largely concentrated in relatively few of them. Moreover, sexual segregation occurs so that the boys especially patronised 'male trades' such as motor mechanics, electricians, machine fitters, joiners, masons, painters, gas and water filters, salesmen, bakers and locksmiths. These 10 trades accounted for no fewer than 39 per cent of all apprentices. In the case of girls, the concentration in a few trades is even greater, with 58 per cent of all female trainees following one of seven trades; hairdressers, saleswomen, office work, business women, doctor's or dentist's or assistants, banks clerks, and retail shop assistants.

The specific training programmes which apprentices undergo are usually of between three and three-and-a-half years' duration, though a large number of occupations require only two years of training, and in some individual occupations training can be completed after one year. In addition, young people with above average school-leaving qualifications, and judged to be of superior learning ability, can have their training period shortened. Subject to the successful passing of examinations, training programmes culminate in qualifications as skilled or white-collar workers. The training which takes place in the employers' premises, which as we have seen comprises the greater part, is governed by a series of federal laws and regulations. Among the most important are the Vocational Training Act of 1969 which specified the basic legal conditions for the provision of on-the-job training, and the Vocational Training Promotion Act of 1981 which governs the planning of vocational training and the work of the Federal Ministry of Education and Science, and which, in collaboration with representatives of industry, business and trade unions, determines what skills and knowledge are required for each occupation. Thus, the BIBB's role is a key one in the Dual System is that, among other things, it provides a kind of 'clearing house' in which the various partners in the system-including the Lander, the employers and the trade unions-can hammer out agreements on vocational training matters. A very important part in the system is also played by private sector autonomous bodies known as Chambers of Industry and Commerce, Crafts, Agriculture, and certain profession, consisting of representatives of employers, employees and vocational school teachers. The chambers are 'responsible agencies' for vocational training and are autonomous, regional organisations to which all firms must belong. The most important chambers are the sixty-nine of industry and commerce and the forty-two of craft. They are responsible, at the end of the apprenticeship, for testing centrally both the vocational elements of the curriculum which are learned largely on the firm's premises, and also those general theoretical aspects learned in the vocational school which are of specific application to the apprenticeship concerned.

The curriculum which apprentices undertake consists of an initial period of broadly-based training lasting about a year, followed by specialist training appropriate to their place of work. Regulations governing curricula for specific trades are agreed upon by the major parties concerned and these are revised and brought up-to-date from time to time. They always include written and practical tests and, often, oral tests, as well. A form of quality control derives from the fact that most chambers obtain standard examination papers from semi-commercial bodies set up for this purpose. The awards given by individual chambers are recognised nationally and are valid throughout the country.

The bulk of the costs of training within the Dual System are borne by the firms with whom trainees sign a contract which guarantees their employe's status. These costs include those of providing instructors, training workshop, machines and materials, and the remuneration of the trainees. In 1985, for example, industry and business spent approximately 20 billion DM on this training. In recent years the amount of money spent by firms on vocational training has risen considerably. This is due partly to the increase in the number of trainees, partly to the need to provide more and better trained instructors and for trainees to spend longer periods in workshops, and partly because an increasing number of small firms are having to send their apprentices to inter-plant training centres. Both the Federal and the Lander governments have also been spending more money in an effort to persuade industry to provide more training places, especially for young people who are disadvantaged in some way, and to improve the quality of vocational training itself. In 1984, for example, they spent more than one-and-a-quarter billion DM on special programmes for pupils at vocational schools, while the Federal Institute of Labour spent over 3.7 billion DM on promoting vocational training on an individual and institutional basis.

Chapter-6

Modern Principles of Education

There are some would disparage the efforts of those theorists who attempt to build models such as those describing educational evaluation. Such critics contend that the models resulting from the efforts of theorists are just that, theories, and are too impractical to be of value to the educational practitioner who is faced with a host of daily decisions. But the evaluation models proposed in recent years are anything but impractical in their orientation. The people who devised these models sensed a deficiency in the way educators typically approaches their evaluation tasks. The model builders wanted to conceptualize evaluation procedures approximately in order to get evaluators to proceed properly. Instructional approaches had been around for decades. Curriculum ideas were clearly old hat. Evaluation notions were, for many educators, brand new playthings. The evaluations theorists of the late sixties and early seventies wanted to guide educators so that they would carry on their evaluation endeavours in a more enlightened fashion.

And let no one doubt that these evaluation models have been influential. Many of the educational evaluations of the past few years have been modeled almost religiously after one of the evaluation schemes proposed by such people as Michael Scriven, Robert Stake, and Daniel Stuffebeam. When people don't really know how to go about a task, they often turn wherever they can for counsel. Their gravitation toward some of these theoretical evaluation models was only natural.

Although it is true that most of the recently proposed models of educational evaluation were designed to guide the actions of educational evaluators, some are more successful than others in that regard. Several of the models are convoluted enough to make a schizoid maze-builder applaud. Others are so jargonistic that they almost defy comprehension, a least without a short course in vocabulary distortion. But even with their defects, the currently available models offer a number of different choices for the educational evaluator. The more concersance one has with these educational evaluation models, the more likely one is to discern alternative courses of action. And because, in general, people make better decisions if they understand their options, educational evaluators should attempt to become familiar with the major models now at land.

MODEL MEDDLING

Although it is sensible for educational evaluators to inform themselves of the nature of educational evaluation models, they should not get too caught up in that enticing but enervating game known as comparative model meshing. Some people take great delight in seeing how Model X differs from Model Q and is ever so slightly like the seventy-ninth range of Model Z. This kind of model comparison may present avocation for the retired educational evaluator; although fruitless, it also appears harmless. Instead of engaging in a game of "same and different," the educational evaluator should become sufficiently conversant with the available models of evaluation to decide which, if any , to employ. Often, a more eclectic approach will be adopted whereby one selectively draws from the several available models those procedures or constructs that appear most helpful.

To aid in that regard, the remainder of this chapter will be devoted to a consideration of four general classes of educational evaluation models and to an analysis of particular models illustrating these four categories. Most of the models to be treated were developed during the late 1960s and early 1970s. for clarity of exposition and, hopefully, increased usefulness, an attempt has been made to sort out the various models according to their main emphasis. An alternative course of action would have been to describe each of a dozen or so models, then encourage the reader to conduct a personal appraisal of the different scheme. Another approach would have been to set out description of various models, then compare then on specific dimensions. This kind of analysis is available elsewhere.

The approach used here was to insolate the overriding orientation inherent in the various model, then group the model under the most general descriptive categories to be employed here are these:

Goal attainment models
Judgement models emphasizing intrinsic criteria
Judgemental models emphasizing extrinsic criteria
Decision-facilitation models

Now, clearly, and effort to scrunch all current evaluation models into these four contrainers is bound to do violence to some of the models. Almost any post-facto classification scheme to handle theoretical models this sort of unlikely to possess those exhaustive but nonoverlapping categories that make classification specialist tingle. Yet, albeit imperfect, this four-category system for viewing extant models of educational evaluation should provide the reader with a set of useful ways of thinking about the diverse evaluation models now on the market. Without some kind of structure for making sense out of this diversity, the danger of being overwhelmed by incomparability of the models is too great. A classification scheme at least helps one secure an idea of the general orientations provided by different models.

After completing this chapter, the reader is urged to consult the original essays on which the present analysis is based. Perhaps this chapter will serve as advance organizer for the reader who would, after completing it, find our what Professors Stufflebeam, Stake et al. have to say for themselves.

A goal-attainment model of educational evaluation conceives of evaluation chiefly as the determination of the degree to which an instructional programme's goals were achieved. More ancient in its lineage, the goal-attainment conception of educational evaluation is usually associated with the efforts of Ralph W. Tyler, who approach to evaluation was reflected in the well-known Eight Year Study of the 1930s. During his extensive and illustrious career in education, Tyler has often spoken and written on his view of an appropriate framework for planning and conducting educational evaluations.

The general approach recommended by Tyler involves the careful formulation of educational goals according to an analysis of three goal sources and two goal-screens. The resulting goals are them transformed into measurable objectives. At the conclusion of an instructional programme, measurements of pupils are taken in order to see degree to which the previously establish goal were achieved. Unattained goals reflect inadequacies in the instructional programme. Attained goals reflect a successful instructional evaluation can be considered, in essence, a goal-attained model.

Tyler was one of the first proponents of behaviorally stated objectives, for he recognised that ill-defined statement of objectives were little of use in an evaluation approach that hinged on detecting the degree to which a programme's objectives had been achieved. Although Tyler's standards regarding the requisite degree of specificity for objectives were less stringent than those employed by many of today's evaluators, the Tylerian tradition of educational evaluation had an enormous impact on the thinking of educators regarding the conduct of educational evaluators.

Even today, major evaluation projects such as the National Assessment of Educational Progress are firmly rooted in Tyler's conception of educational evaluation. Tyler recognizes, of course, that goals can be altered. Unattained goals, although permitting the inference that the instructional programme was ineffectual, might also result from an inappropriate selection of goals in the first place. But educational goals and the degree to which they are achieved, without question, constitute the heart of Tyler's evaluation approach.

A more recent variation of the goal-attainment model is that proposed by Hammond who also conceives of evaluation in terms of whether an educational programme is "really effective in achieving its expressed objectives." The several steps in Hammond's model include:

1. isolating that aspect of the current educational programme to be evaluated.
2. defining the relevant institutional and instructional variables,
3. specifying objectives in behavioural terms,
4. assessing the behaviour described in the objectives, and
5. analyzing goal-attainment results.

Hammond's model goes to greater length in attempting to spell out the nature of the institutional and instructional factors that might be relevant in considering the degree to which expressed objectives are achieved. The step of his recommended sequence of operations involves analyzing the relationship between these instructional and institutional variables as they bear on measured learner behaviour.

Another example of a goal-attainment model has been offered by Metfessel and Michael. Their approach consists of eight steps:

1. Involve members of the total community.
2. Construct broad goals and specific objectives.
3. Translate specific objectives into forms that are communicable and that facilities learning.

4. Develop measurement instrumentation.
5. Carry out periodic measurement.
6. Analyze measurement data.
7. Interpret analyzed data.
8. Formulate recommendations for programme change or modified goals and objectives.

The most helpful part of the Metfessel and Michael approach is their effort to set forth different classes of criterion measures that might be employed to reflect the goal-attainment of an educational programme. Having recommended the use of multiple criterion measures, they provide a comprehensive list of diverse criterion measures that might be considered by evaluators. The reader who wishes to examine divergent conceptions of the measures used to reflect goal attainment should consult the Metfessel-Michael essay.

The review, the main thrust of goal-attainment models is the degree to which prespecified instructional goals have been achieved. The quality of goals is, obviously, of considerable import. In the next chapter we shall treat the topic of educational goals in more detail.

Another class of models includes those in which major attention is given to professional judgement. In these approaches the evaluator exercises considerable influence on the nature of the evaluation, inasmuch as it is that evaluator's judgement that determines how favourable or unfavourable the evaluation turns out to be. But the particular focus of the evaluators's judgement permits us to subdivide this approach to evaluation further, depending on whether chief attention is given to intrinsic criteria or extrinsic criteria.

Judgemental approaches to educational evaluation in which the emphasis is on intrinsic criteria are very common in educaton, but most are too haphazard to be properly classified as instances of systematic educational evaluation. An exception to this, however, is the accreditation model of educational evaluation.Accreditation approaches to the evaluation of educational endeavours appear to be declining in popularity, but there was a time when this approach represented perhaps the most prevalent form of systematic educational evaluation.

Accreditation evaluations are typically carried on by associations of schools, such as the well-known-North Central Association. Representatives of the accrediting agency visit a school, and, on the basis of previously determined evaluative criteria, judge the school's programme. With few exceptions the dimensions of interest to accreditation terms have been intrinsic criteria, such as the number and quality of books in the school library, the degree of training of the schools faculty, or the physical plant.

Quite often, prior to their site visit, the accreditation agency directs the participating school to engage in an extended self-study in anticipation of the accreditation visit. Reports are prepared that are organized around the criteria supplied by the accreditation agency. Participants often report that these anticipatory activities represent one of the most useful aspects of accreditation evaluations.

A major reason for the diminishing interest in accreditation conceptions of evaluation is the recognition of their almost total reliance on intrinsic rather than extrinsic criteria. Although there is some intuitive support for the proposition that these process factors are associated with the final outcomes of an instructional sequence, the scarcity of empirical evidence to confirm the relationship has created growing dissatisfaction with the accreditation approach among educators. Although few evaluators would recommend that intrinsic criteria be discounted completely in judgemental models for these factors can sometimes help clarify what is really operate in a given programme, evaluation models that emphasize intrinsic criteria are not often recommended with fervour these days.

There are several approaches to educational evaluation recommended by evaluation theorists that can best the described as judgemental schemes in which primary attention is given to extrinsic criteria, although they contain elements of the previously described models. The most significant of these models are those proposed by Michael Scriven, a philosopher, and Robert E. Stake, a psychometrician. Both men have contributed significantly to the understanding of the evaluation process as it applies to education.

SCRIVEN'S RECOMMENDATION

What Professor Scriven has brought to educational evaluation is less a formal evaluative model, complete with diagrams, flow charts, and the other regalia typically spawned by model-builders, than a series of important insights and clarifications regarding varied aspects of educational evaluation. Yet, by summing these distinctions and explanations we can arrive at a rather cohesive framework for the conduct of educational evaluations. Hence if seems no major semantic distortion to deal with Scriven's recommendations in the context of considering contemporary evaluation models.

The Formative-Summative Distinction: It has been previously noted that Scriven first drew or attention to the distinction in roles served by evaluators who formatively try to improve a still under-development instructional sequence and evaluators who summatively assess the merits of already-completed instructional sequences. The differences in partisanship exercised by formative and summative evaluators, not to mention their use of different procedures, have made this distinction a particularly influential one. Scriven's formative-summative distinction is widely used by today's educational evaluators, although in some cases with connotations somewhat different than those intended by Scriven.

Attention to the Quality of Goals: Scriven conceives of evaluators as an assessment of merit. He is particularly dismayed with those who would equate educational evaluation with the degree to which goals are achieved. He stresses the necessity to assess the merit of the goals themselves. As he points out, "... it is obvious that if the goals aren't worth achieving." His recommendation, namely, that evaluators bring considerable attention to appraising the quality of goals as well as whether the goals have been achieved has alerted evaluators to the impropriety of passively accepting any goals preferred by programme designers. For instance, if an autocratic school superintendent mandated a series of inhumane and antidemocratic goals, the evaluator should not meekly appraise the instructional programme in terms of whether those reprehensible goals were achieved. Scriven would recommend a more rigorous evaluation and, in this case, repudiation of the goals themselves.

Pay off Evaluation: Scriven describes an evaluation approach that focuses on extrinsic criteria as payoff evaluation. He contrasts this with intrinsic evaluation, which, as we have seen, attends more to the internal characteristics of an instructional programme. Although Scriven tends to stress payoff evaluation rather than intrinsic evaluation, he is not disdainful of intrinsic evaluation. Indeed, he offers advice regarding how evaluators may engage in "bybrid evaluation, which combine attention to intrinsic and extrinsic criteria. He even argues against the possibility of pure payoff evaluation, suggesting that attention to intrinsic factors is almost inescapable.

An Emphasis on Comparative Evaluation: In his classic 1967 paper on evaluation methodology, Scriven distinguishes between comparative and noncomparative evaluation, the latter having been proposed several years earlier by Lee J. Cronboch in an essay regarding how to improve instructional sequences via evaluation. Scriven opts for a comparative orientation to evaluation,, pointing out that the decision focus of educational evaluation typically involves choices among competing alternatives. Although concdding, as Cronbach contends, that comparative evaluations of educational programmes often make it difficult to understand what accounts for the differences among the programmes, Scriven observes that action decisions can be made without completely understanding why one programme is better than another. If, on the basis of a comparison of two reading programmes, the evaluator can show that one programme even without completely comprehending the reasons that it works better. It is the job of the educational researcher to ferret out the factors that lead to the more effective programme's superiority. The educational evaluator can make action recommendations without that information.

Scriven's strong advocacy of comparative evaluation has made many evaluators approach their task by searching for reasonable comparisons among the objects they evaluate.

Goal-free Evaluation: In the late sixties the federal government, sometimes because of legislative mandate and sometimes because of rational management practice, attempted to monitor the manner in which major financial resources were being spent on education. Much of this federal money was being used to support the newly created research and development centres, located at major universities throughout the nation, and the regional laboratories for educational research and development. Several of these enterprises were substantially funded operations with annual budgets running as high as two or three million dollars per year. The typical scheme employed to evaluate these and similar agencies involved the appointment of a group of individuals who constituted a review team for each agency. The review team typically spent several days conducting a site visit at the agency, visiting with staff members and examining the reports and products developed by the agency. At the conclusion of the site visit, the review team would prepare a report evaluating the agency, then submit the report, to the appropriate federal funding organisation.

Because of his increasing visibility as an evaluation theorist Scriven was involved in a good many of these review teams. He detected in interesting phenomenon during he site visit, which constituted the chief data gathering phase of these evaluations. Almost without exception the review team commenced their work by requesting information regarding the agency's goals or the goals of the various subprojects within the agency. Almost every subsequent interaction between review-team members and the staff of the research and development agency was influenced significant by these initial relevations regarding the agency's aims. So influential, in fact, watch, was the review team's awareness of project goals that Scriven opined such goal-preoccupation might actually be interfering with the quality of the evaluator's work. He sensed that the evaluators' concern about the project's goals might, consciously or unconsciously, be leading to a form of tunnel-vision in which the review team was actually inattentive to those outcomes of an agency programme that, although not represented by the original intentions of the agency, were nonetheless real. to counteract these tendencies, Scriven proposed a technique he describes as goal-free evaluation.

In contrast to goal-based evaluation in which the evaluator is attentive to not only the quality of an educational programme's goals but also the degree to which those goals are achieved, goal-free evaluation focuses on the outcomes of a programme, intended as well as unanticipated. The goal-free evaluator is not concerned with the rhetoric of the instructional designers regarding what they want to the results accomplished by the designers' programmes. Scriven is not recommending goal-free evaluation as a replacement for goal-based evaluation, but as a supplement to more goal-oriented framework.

How does goal-free evaluation work? Well, in brief it consists of assiduously avoiding any "contaminating " knowledge regarding project goals, while trying to discern what the total effects of the project are. This is trickly job, since to figure out what a project's effects are without access to any information regarding its contents forces the evaluator to draw inferences about probable effects on the basis of inspecting the programmes components. Having drawn such inferences, then it is the evaluator's job to devise measures, or borrow them from the project where available, and assess the programme's effects. Scriven talks about the goal-free evaluator's "setting snares" to detect a programme's consequences. These snares or measurement schemes would obviously have to be contrived so as to pick up the programme consequences that in the view of the goal-free evaluator, would be most likely to occur.

The chief advantage of goal-free evaluation is that it encourages the evaluator to be attentive to a wider range of programme outcomes than might be the case with a goal-based evaluator who has been unduly influenced to look for project results consonant with project aims. Scriven coneives of goal-free evaluators functioning internally as well as externally to instructional projects. For instance, in a curriculum materials development project a goal-free internal evaluator who was a member of the project staff might, either formatively or summatively in terms of their result. Goal-free external evaluators, those who conducted their evaluations without being actual members of the instructional project's staff, could also prove useful in a summative or formative role.

Ideally, a well-designed evaluation would have both goal-based and goal-free evaluators involved in the evaluative effort. If insufficient resources do not permit this luxury, then one must decide how to spend one's limited evaluation dollars. For instance, we might wish to utilize an internal goal-based evaluator whose focus was summative evaluation.

Goal-free evaluation, one of Scriven's many original contributions to evaluation theory, has not yet been used in enough settings to permit judgements regarding its efficacy. As an adjust to more conventional approaches to evaluation, it would certainly seem to warrant attention.

The Modus Operandi method: Scriven has also introduced an additional technique, known as the Modus Operandi, which he believes will be of use to educational evaluators in certain situations where they are unable to use experimental or quasi-experimental approaches. The Modus Operandi Method is fashioned after procedures employed by he detective, the historian, the anthropologist, and the electronics trouble-shooter. An extensive consideration of the Modus Operandi Method is, particularly in view of its neonate status, not appropriate here, but a brief sketch of its major elements may titillate the reader sufficiently to consult Scriven's more-detailed treatment.

The most common application of the Modus Operandi method would be to detect whether an intervention we are trying to evaluate is the cause of a set of effects judged to be desirable.

The most common application of this procedure is in the field of crime detection where the experienced police lieutenant instantly recognizes the modus operandi of burglar who typically breaks into office buildings via freight elevators and air-conditioning systems. In autopsy analysis the coroner also employs a knowledge of M.O.'s associated with drowning, certain kinds of poisoning, and coronary attacks. As Scriven puts it, with characteristic philosophical precision: "The M.O. of a particular cause is an associated configuration of events, processes, or properties, usually time sequences, which can often be described as the characteristic casual chain connecting the cause with the effect.

The flavour of the Modus Operandi Method may be conveyed by one of the schemes Scriven suggests. In general we should try to discover whether a complete casual chain is present between the effect we have discerned and the intervention we are evaluating. We also have to see whether there are other complete casual chains that could serve to link the effect with other causes. For instance, the evaluator employing the Modus Operandi Method might observe an effect that possibly was caused by the instructional treatment to be evaluated. The evaluator should:

1. Check for the presence of each possible cause. If only one is present, then it is the cause.
2. If more than on possible cause is present, check for complete M.O.'s. If none are present, then none of the possible causes are, in fact, in a use.
3. If only one M.O is complete, the possible cause associated with that M.O. is actually the cause.
4. If more than one complete M.O., is present, the possible causes associated with those M.O.'s are co-causes.

The conclusions of this kind of analysis are, of course, probabilistic rather than definitive, yet evaluators must often access merit, and identify its causes, with less than perfect certainty. Scriven's Modus Operandi

Method will surely receive attention from evaluation specialists in the future, because in addition to representing an intriguing new evaluative tactic it can bring out the latent Sherlock Holmes in all of us.

It should be apparent from the numerous recommendations that Scriven offers evaluators that his influence on the field will continue to be significant. The reader is urged to consult the several essays by Scriven cited in the references at the close of this chapter.

STAKE'S COUNTENANCE MODEL

In another important evaluative essay, Robert E. Stake proposed a system for conducting education evaluations in a 1967 article entitled "The Countenance of Education Evaluation." Because of the total of that essay, Stake's approach to evaluation is often referred to as his Countenance Model.

Stake's conception of evaluation emphasizes two chief operations, description and judgement. He sets forth a well-organized scheme for carrying out these two activities, drawing the reader's attention to several important considerations that should be needed by those who would describe and judge.

One of the helpful aspects of the Countenance Model is that it distinguishes between descriptive and judgemental acts of the evaluator according to three phases of an educational programme, that is, its antecedent, transaction, and outcome phases. Stakes conceives of antecedents as conditions existing prior to instruction that may relate to outcomes. He views transactions as the "succession of engagements" that constitute the process of instruction. Outcomes are considered to be the effects of an instructional programme. We shall illustrate each of these in a moment.

Stake then divides descriptive acts according to whether they refer to what was intended or what was actually observed. He argues that both in intentions and what actually took place must be fully described. He then divides judgemental acts according to whether they render to the standards used in reaching judgements or to the actual judgements themselves. He assumes the existence of some kind of rational guiding the design of an educational programme.

Stake combines these several distinctions in a graphic representation of the statements and data needed to be gathered by an evaluator. This layout is represented in figure.

Notice that, apart from the rationale, the six cells as the left of the layout refer to descriptive operations, whereas the six cells at the right deal with judgement operations.

We can illustrate the various dimensions of Stake's model by the following fictitious example regarding a high school government teacher, Mr. Vine.

RATIONALE

Mr. Vine has decided to emphasize the distinctions between functions of local, state, and federal government because he believes that these distinctions are pivotal in one's understanding of citizenship responsibilities.

INTENTS

Antecedents: Mr. Vine knows that chapter 9 has been assigned for Tuesday.

Transactions: He plans to have a lecture plus discussion on Tuesday.

Outcomes: He estimates what students will be able to do on a quiz Wednesday.

OBSERVATIONS

Antecedents: He observes that six students were absent on Tuesday.

Transactions: His lecture took so long that there was little for discussion.

Outcomes: On Wednesday's quiz well over half the students answered an important question incorrectly.

STANDARDS:

Antecedents: He expects a few absences on non-quiz days such as Tuesday.

Transactions: He believes his lectures are clear enough for 80 per cent of the class to understand them.

Outcomes: His fellow government teachers believe three-fourths of their students should do well on these kinds of quizzes.

JUDGEMENTS

Antecedents: Mr. Vine retrospectively judges the chapter 9 reading assignment to be somewhat confusing.

Transactions: Several of his weaker students told him his lecture was unclear.

Outcomes: A teacher's aid assigned to grade the quiz papers said too many students performed poorly on the quiz.

Stake's data matrices help us to see how his model inclines the evaluator to engage continually in description and judgement, at the beginning, during, and at the end of an educational programme. His distinction between intents and observations reminds us how the aspirations of educators are often realized in the antecedents, transactions, and outcomes that actually occur.

Stake's Countenance Model also elaborates on the manner in which judgements are made by evaluators. He points out that when we judge an educational programme we engage either in relative comparisons, absolute comparison, or both relative and absolute comparisons. Stake recommends that the judgemental criteria used in educational evaluations be explicited as clearly as possible prior to employing them in actual judgements.

After devising his 1967 Countenance Model, Stake became more attuned to discovering what the evaluator's clients actually want. He argues us to discover these concerns prior to designing an evaluation project. He recommends a responsive evaluation stance in which great attention is given to the description and judgement needs of those who commission the conduct of an evaluation. Stake believes that insensitity to the perceive needs of those individuals from whom an evaluation is being conducted will lead to an unresponsive, hence futile evaluation.

Both Scriven and Stake as proponents of judgemental models believe that the capable evaluator will be able to make subtle judgements about various facets of an educational programme. Although their emphasis is on judgement of extrinsic criteria, it should be obvious that their models reflect considerable concern with a number of additional factors.

DECISION-FACILITATION MODELS

Several evaluation paradigms have been proposed that, although they involve the evaluator's use of judgement and determine whether goals are attained can best be characterized as decision-facilitation models. The orientation of these models is so overwhelmingly toward servicing educational decision-makers that some of their proponents conceive of the evaluator as the decision-maker's handmaiden/handmister.

In a good many respects, one might argue, there is overlap between these decision-facilitation models and the three classes of evaluation models we have previously examined, that is, goal-attainment models, judgemental models emphasizing intrinsic criteria, and judgemental models emphasizing extrinsic criteria. Although this is true., there is an important difference. Decision-facilitation evaluators are less willing to assess personally the worth of educational phenomenon. They will strive to collect and present the information needed by someone else who will determine worth. Decision-facilitation evaluators view the final determination of merit as the decision-maker's province, not theirs.

Although it is obvious that decision-facilitation evaluators cannot completely avoid engaging in worth-determination acts as they ply their trade, it is this overriding disinclination to engage in personal valuing, coupled with their mission to abet the decision-maker's tasks, that renders them at least relatively distinct from the other approaches we have treated .

THE CIPP MODEL

One of the best known of the decision-facilitation evaluation schemes is the CIPP Model. CIPP is an acronym representing the four types of evaluation this model identifies, namely, context evaluation, input evaluation, process evaluation. The CIPP Model was originated by Daniel Stufflebeam and Egon Guba. The fact that it has become well known in spite of the fantasy-like names of its parents strongly suggests the approach must possess some merit. Because Stufflebeam has been more active in refining the a CIPP Model during recent years, we shall use his writings as a chief source of our analysis.

The CIPP Definition of Evaluation : The CIPP approach to evaluation is rooted in its definition of evaluations:

Evaluation is the process of delineating, obtaining, and providing useful information for judging decision alternatives.

Stufflebeam elaborates on this definition by pointing out that "Since evaluation is performed in the service of decision making." it should emphasize the provision of information useful to those who must make decisions. Because evaluation is a continuing and cyclic process, it must be implemented via a systematic programme. Stufflebeam believes that of the three steps involved in this model, that is, delineating, obtaining, and providing information, the delineating and providing operations are carried out collaborative between evaluator and decision- maker, whereas the obtaining of information is a technical activity carried out primarily by the evaluator.

These three major steps in the CIPP evaluation process are described as follows:

1. delineating refers to the focusing of informative requirements needed by decision-makers through such operations as specifying, defining, and explicating;
2. obtaining refers to the collection, organisation of information using such technical procedures as measurement and statistics;
3. Providing refers to the synthesizing of information so that it will be optimally useful for purposes of the evaluation.

Note that all the three steps involve information and how it can best be isolated, gathered, and presented to those people who make educational decisions.

Decision Settings: The CIPP model also distinguishes among different settings in which decisions are made. Decisions that involve maintenance of the normal balance of an educational system are described as homeostatic. Homeostatic decision making would involve such operations as determining faculty assignments or students' course schedules. Decisions that involve developmental activities aimed at the continuous improvement of a programme are described as incremental. Incremental decision making would include such operations as the introduction of a model innovative programme that would not run the risk of a major expense or a major failure. Decisions that involve large innovative efforts to solve significant problems are described as neomobilistic. Neomobilistic decision making would include such activities as major governmentally subsidized efforts to develop instructional materials, such as those now being prepared at several regional laboratories for educational research and development. Decisions that denote utopian actively designed to produce complete changes in an educational enterprise are described as metamorphic. The CIPP Model-makers concede that a metamorphic decision setting is only of theoretical interests, as the possibilities of this type of dramatic system-modification is almost never encountered in the real world to education.

One clear contribution of the CIPP Model is that it augments the evaluator's vocabulary. Just think of how many school superintendents could be intimidated by an evaluator's assertion that "Your programme is utterly neomobilistic!" Early users of the CIPP Model sometimes thought that neomobilism referred to that stage of adolescence associated with the onset of driving privileges.

Types of Evaluation: The CIPP Model, in addition to indentifying several decision settings, also distinguishes among four types of educational decisions. These are (1) planning decisions to determine objectives, (2) structuring decisions to design instructional procedures, (3) implementing decisions to use, monitor, and improve these procedures, and (4) recycling decisions to judge and react to the outcomes produces by those procedures. For each of these different types of decisions, a corresponding type of evaluation is recommended, namely: context, input, process, and product. These four forms of evaluation constitute the heart of the CIPP Model.

Context evaluation, according to Stufflebeam, the most basic kind of evaluation. Its mission is to provide a rationale for the determination of educational objectives. A context evaluation attempts to isolate the problems or unmet needs in an educational setting. Consideration of such factors then leads to the identification of the general goals and specific objectives that should be the focus of an educational programme. Context evaluation involves an analytic effort to conceptualize the relevant elements of an educational environment, as well as an effort to gather empirical data that help identify the problems, needs, and opportunities present in an educational context. The methods of context evaluation are chiefly descriptive and comparative. The context evaluator describes the status of an educational setting, then compares present, probable, and possible system outputs. The conclusion of context evaluation is characteristically the identification of a set of specific objectives for which an instructional programme can be designed.

Input evaluation is supposed to provide information regarding how to employ resources to achieve programme objectives. During input evaluation the task is to ascertain the nature of available capabilities of the instructional system and potential strategies for achieving the objectives identified as a consequences of context evaluation. The input evaluator secures information needed to appraise alternative strategies, whether they are based on the system's current capabilities or whether external resources need to be added to the system. Input evaluators help decision-makers select and design the procedures deemed suitable for promoting attainment of programme goals, for instance, if a set of programme objectives had been selected that revolved around learner mastery of certain chemistry objectives, then the input evaluators's tasks would be to delineate, obtain, and provide information needed for decisions regarding which instructional resources to use and in what manner they shoud be employed in order to promote achievement of the objectives identified.

Process evaluation is required once the instructional programme is up and running. The purpose of process evaluation is up and running. The purpose of process evaluation is to identify any defects in the procedural design, particularly in the sense that planned elements of the instructional programme are not being implemented as they were originally conceived. The process evaluator describes procedural events and activities so that any deficits in the instructional design can be discerned, or, in some cases, anticipated. The records made by the process evaluator are also useful in retrospective analyses of the instructional programme in order to isolate any particular strengths or weaknesses. In essence, process evaluators monitor the actual instructional procedures in order to help the instructional decision-makers anticipate and overcome.

Product evaluation attempts to measure and interpret the attainments yielded by an instructional programme not only at its conclusion but, as often as necessary, during the programme itself. The methods of product evaluation are similar to those of the goal-attainment evaluator and the judgemental evaluator who emphasize extrinsic criteria, except that the CIPP product evaluator, as always, delineates, obtains and provides information needed by those who must make decisions regarding the programme. The emphasis in product evaluation, however, is clearly on the outcomes related to the objectives of the programme, then comparisons are made between expectations and actual results. The product evaluator helps others decide whether to continue, terminate, modify or refocus an instructional programme.

These four types of evaluation, cast as they are in a decision-facilitation framework, constitute a fairly full-blown model, particularly when they are viewed in relationship to the types of decision settings previously examined. Several years ago, shortly after the CIPP Model was conceived diagrammatic flow charts of the scheme, replete with its multiple destinations, inspired awe on the part of many neophyte evaluators.

CIPP and the Formative-Summative Distinction: Stufflebeam has attempted to relate the CIPP Model to Scriven's formative and summative evaluation. In reconciling these constructs. Stufflebeam distinguishes between evaluation for decision making and evaluation for accountability. He believes that when evaluation serves a formative role it is proactive and is aimed at abetting decision-makers when, however, evaluation serves a summative role it is retroactive in nature is aimed to serve as a basis for accountability.

Stufflebeam's attempted reconciliation can be presented pictorially where it can be seen that the key distinction is based on whether the evaluation is formative, hence before-the-fact and aimed at the needs of an accountability system.

The CIPP Model provided the first full-blown framework to guide those evaluators who saw their mission chiefly as one of helping those who must make educational decisions Stufflebeam, Guba, and their colleagues reflect this bias succinctly in the introduction to their 1971 volume describing their approach:"The purpose of evaluation is not to prove but to improve."

THE CSE MODEL

The UCLA Centre for the Study of Evaluation (CSE) is a research and development center devoted to the analysis and improvement of educational evaluation practice. The centre's approach to evaluation, most completely described by its director, Marvin C. Alkin, is usually referred to as the CSE Model. The CSE model also is highly attentive to the requirements of those who must make educational decisions, as is indicated in the definition of evaluation provided by the model:

> Evaluation is the process of determining the kinds of decisions that have to be made; selecting, and analyzing the information needed in making these decisions; and reporting this information to appropriate decision-makers.

As Alkin has pointed out, the CSE Model is similar to the CIPP Model except that what Stufflebeam refers to as process evaluation has been substantially reconceptualized. Whereas the CIPP evaluator focuses on procedural considerations during process evaluation, the CSE Model encourages evaluators to attend to the enroute products as well as process of the programme being evaluated. The CSE approach is more explicitly tied to the different kinds of decisions to be make at each of five stages. Let's consider these stages and their associated decision foci.

Needs Assessment: The initial stage of the CSE Model focuses on the provision of information regarding the extent to which educational programmes are meeting their objectives. An attempt is made to ascertain the current status of an educational programme's outputs, then this status is contrasted with desired programme outcomes. The differences between what is and what is desired is described as an educational need, and is used to identify educational goals. The decision focus of this first stage of the CSE is problem selection.

Programme Planning: the second stage of the CSE Model provides information regarding the sorts of instructional programmes that meet the needs identified during he needs-assessment stage. For exəmple ,an evaluator engage in this activity might apprise the degree to which purported objectives of commercially developed instructional materials meshed with the objectives derived from the previously conducted needs assessment. The decision focus of programme planning, therefore, is programme selection.

Implementation Evaluation: After programme planning, the CSE evaluation would provide information on the degree to which the instructional programme is actually being carried out in accordance with the programme plan. The necessity for monitoring the degree to which a programme coincides with the programme designs by those who carry out a programme. This stage of the CSE approach is most akin to CIPP's process evaluation. The decision focus of the implementation evaluation stage of CSE Model is programme modification.

Progress Evaluation. The fourth stage of the CSE scheme provides information regarding the extent to which the planned programme is achieving its objectives. The evaluator is, in this phase of the CSE Model, clearly an interventionlist. The progress evaluator tries to identify the relative success of the different components of a programme. Unlike their CIPP counterparts, however, CSE evaluators are attentive to the en-route product of the programme at this stage. This represents a clear distinction between the CIPP and CSE approaches. As with implementation evaluation, the decision focus of progress evaluation is programme modification.

Outcome Evaluation. As implied by its title, the final stage of the CSE Model emphasis the provision of information regarding the general worth of the programme as reflected by the outcomes it produces. Information regarding the extent to which the objectives have been achieved is obviously significant. The outcome evaluator wants to present information to decision-makers so that they can determine whether a programme should be eliminated, modified, retained, or disseminated more widely. The decision focus on the final stage of the CSE Model is programme certificate adoption.

A comparison of the CSE and the CIPP Models will reveal several similarities, particularly with respect to the first two stages of each model. Although there are basic similarities between these major components of the two approaches, there are also important differences that will his associates sharpen the CIPP Model and Alkin and his colleagues refine the CSE Model. One of the important features associated with the CSE Model is that is proponents have developed wide range of instructional materials, and other resources, designed for groups and individual self-study, to familiarize educators with the ingredients of the CSE approach. The widespread use of these materials would suggest that the CSE Model currently influences actual evaluation practice as much as any of the model considered here. For example, several firms specializing in evaluation by contract organize their services around the CSE Model. Information regarding materials descriptive of the CSE approach can be secured from the Center for the Study of Evaluation.

THE DISCREPANCY MODEL

Malcolm Provus, during his tenure as Director of Research for the Pittsburgh public schools, devised another systematic approach to evaluation based on the premise that evaluation involves the comparison of performance with standares. Because Provus' model is particularly attentive to the discrepancies between posited standards and actual performance, it is generally referred to as the Discrepancy Model of educational evaluation. More specially, Provus offers the following definition of evaluation:

Programme evaluation is the process of

1. defining programme standards;
2. determining whether a discrepancy exists between some aspect of programme performance and the standards governing that aspect of the programme; and
3. using discrepancy information either change performance or to change programme standards.

The Discrepancy Model consists of five stages, the first four of which follow this general paradigm:

S T

- C - D -

P A

Where S = Standard

P = Programme performance

C = Comparison of S with P

D = Discrepancy information resulting
From C
T = terminate
A= alternation of P or S

As can be seen, after comparative performance with standards, the inspection of the resulting discrepancy information leads to four alternatives. The programme can be

Design. The first stage of the Discrepancy Model is the design stage. This operation is focused on documenting the nature of the programme including

1. the objectives of the programme,
2. the students, staff, and other resources that must be present before programme objectives can be realized, and
3. the instructional activities presumed to promote attainment of the objectives.

In rough terms, the activities associated with this stage are comparable to those seen in the first two stages of the CIPP and CSE Models.

Installation. The second stage of the Discrepancy Model involves an effort to see whether an installed programme in congruent with its installation plans. The programme design emerging from stage 1 represents the standards (S) against which the programme (P) is compared (C) to detect the presence of discrepancies (D). The usual four choices of action are available to the programme's a decision-makers, that is, terminate, proceed, alter performance, or alter standards. This stage is similar to the CSE Model's implementation evaluation stage.

Process. In the third stage of the Discrepancy Model the evaluator attends to the question of whether "enabling objectives" are being achieved. The evaluators' role here is similar to Scriven's formative evaluator, to CIPP's process evaluator, or to CSE's implementation or progress evaluator. The usual Discrepancy Model paradigm is used involving comparison between standards and performance with resulting discrepancy information guiding decision-makers.

Products. The fourth stage of the Discrepancy Model is focused on the question: "Has the programme achieved its terminal objectives?" The standards derived during stage I are contrasted with the actual post-instruction performance of learners to detect any discrepancies. This stage involves activities comparable to those employed during the final stages of the CIPP and CSE Model.

Programme Comparison. The final stage of the Discrepancy Model unlike the first fore, which are developmental in nature, is concerned with a cost-benefit analysis of the now-completed programme with other competing programmes. Provus properly points out that unless there is a sufficient degree of replicability associated with the programme to be contrasted, such cost-benefit analysis are impossible.

As can be seen from a comparison of the Discrepancy Model with the two decision-facilitation models previously examined, there is much similarity among these three evaluation frameworks. Because they all subscribe to the same general conception of evaluation's function, this is not surprising. As Provus observers, "those responsible for making decisions about one or more programmes are the first and primary audience for evaluative information." The decision-facilitation evaluative models conceive of the educational evaluation as a purveyor of the information needed by the decision-maker. As a collection of highly related approaches they have reminded educators of the major decision orientation that evaluation must display if it is to make a real difference in the nature of educational practice.

The descriptions provided in this chapter of the most prominent contemporary conceptions of evaluation will, hopefully, have accomplished several missions. For those who only wish an overview of the approaches currently espoused by different evaluators, the descriptions given herein may be sufficient. For those readers whose appetites have been whetted for a more intensive pursuit of one or more of these approaches, the brief accounts may serve as introductions. One of the best collections of essays pertinent to these models is the recent book of readings compiled by Worthen and Sanders. The Worthen and Sanders volume also contain an excellent point-by-point comparison of many of the models described here.

It should also be apparent that the four-category classification scheme presented here must sometimes be bent a bit, in order to account tidily for some of the actual differences witnessed in the particular models. In general, the four categories seem serviceable, i.e. , goal-attainment models, judgemental models emphasizing intrinsic criteria, judgemental models emphasizing extrinsic criteria, and decision-facilitation models.

Finally, for those who derive special raptures from engaging in model-comparisons, the instructions supplied here will help circumscribe the different models' boundaries. It should be apparent, of course, the a builder of evaluation models has a difficult time subscribing to Polonius' admonition, "Neither a borrower nor a lender be." But although the effective evaluator will hopefully avoid the perils of becoming preoccupied with model minutia, these diverse approaches to the task of educational evaluation are obviously instructive. To proceed without modest conversance with their major elements would be foolhardy.

Chapter-7

Vocational Curriculum and the Challenges to Teacher Preparation

Changes to modern industrial societies have often been described as moving from a 'Fordist' to a 'post-Fordist' stage of development. The process of change effects not only technology and economic relations but also consumption patterns and life style. Fordist can be seen as a set of compromises put into place in the early years of this century, regulating mass production and mass consumption by means of Keyynesian economies and the welfare state. These compromises began to break down politically after 1968 when mass consumerism was put into question, economically after the oil crisis of 1973 and culturally at around the same time as 'post-modernist' styles began to emerge.

In the world economy, the countries of the Pacific Rim are emerging while European countries, and the United Kingdom in particular, have lost their former hegemony and are struggling to maintain their position in the competition between industrialised nations. To maintain competitiveness, countries see it as crucial to boost productivity and lower unit costs, as well as exploiting to the full technological and scientific research and development. Investment in information technology, both in capital and human terms, has been decisive to this respect.

The term 'post-Fordism' is much used but its meanings are contested. Post-Fordism represents many strands of through and, like any new paradigm has both a left and a right wing. Some writers, notably Piore & Sabel use an overlapping concept: 'flexible specialization'. There is doubt as to how much is new in the post-Fordist model, but even those who advocate the idea agree that, like Fordism, it cannot be uniformly found throughout all sectors of society. For the purpose of this paper it will be assumed that at least some features of post-Fordism restricting of many occupations. However, in other sectors a neo-Fordism is being constructed, which adapts to its own ends some ideas usually thought to be characteristic of post-Fordism. Lipietz, for example, argues that the ending of Fordism has resulted in 'liberal productivism.

Most writers on post Fordism content that new technologies and more flexible work practices demand an education and training system that can increase levels of skills. They describe the labour market as becoming divided into a core and a periphery. The core should be consists of educated and innovative skilled workers who can work cooperatively, show initiative, be adaptable, enjoy a 'high trust relationship' and work in a less hierarchical structure. If this is happening to a certain extent, there are also countervailing tendencies, in particular the job insecurity which now affects white-collar as well a manual workers and brings some of them into peripheral work. This white-collar peripheryis nevertheless very dependent on educational capital. The implication of post-Fordist changes for the United Kingdom is that skills levels will need to increase rapidly, to accommodate new technology and new working practices, as well as to compete with other countries, notably Pacific Rim countries who are rapidly developing their education and training system.

POST-FORDISM AND EDUCATION

Most writers who have tried to link post-Fordism with education have done so in a generalized and unspecific manner. Where more specific claims have been made, they tend to contain anachronisms. For example, Hickox & Moore describes 'progressive education' as post-Fordism, despite its origins in the early 20th century. Similarly, Rustin tables 'teacher-based assessment' as post-Fordism although it become fashionable in the United Kingdom at least as early as the 1960s.

Avid is critical of any attempt to base education and training on a post-Fordism analysis. He argues that post-Fordism is still capitalism and therefore has limited radical potential. Indeed he things it may even these relations can easily lose their radicalism. "This overlooks the fact that the vocational curriculum has rarely been seen as a radical force in the way that the school curriculum or higher education have been claimed for radicalism. For example, the left-wing lectures associated with the NATFHE General Studies Section have argued for general studies in further education (FE) colleges as an antidote to the converatism they see in vocational courses.

Writers on Fordism advocate a close link between formal education and productive work, for workers at all levels. Some divisions have been undoubtedly broken down, but insufficient attention has yet been paid as to how. Let us see what is actually happening in the curriculum.

THE VOCATIONAL CURRICULUM AND ITS MEANING

Fordist labour processes were founded on the distinction between mental and manual labour. This distinction both derives from and generates an epistemology dividing skill and knowledge, giving a series of related distinctions shown in the Table.

Knowledge	Skill
Mental	Manual
Academic	Vocational
Theoretical	Practical
Abstract	Concrete.

Table Parallel pairs of terms

These pairs never corresponded more than loosely, but are now being broken up and re-formed in new sets of relations, redefining the meaning of 'vocational'. This term has already a complex history. Originating together with the idea of profession having a 'vocation' (a 'calling') meant more than just possessing the technical skills associated with being for example, a doctor; it entailed a moral perspective, one of an awareness and obligation to the wider implications of one's work; social, economic, aesthetic, etc. Inge Bates explains that the word 'vocation' had a religious significance" .....to the experience of being called by God to a particular way of life and thus associated with spiritual satisfaction, commitment and individual responsibility. This moral perspective was traditionally found in apprenticeship, where concern was not just about acquiring high levels skill in the particular and upholding the morality of the trade.

The particular relationships in the workplace today have one set of values, which for Marxist writers in conflict with the intrinsic value of work. Among these writers, Gramsci was particular concerned to connect work with culture.

For work is the specific mode by which man actively participates in natural life in order to transform and socialist it more deeply and extensively.

Gramsci was suspicious of education based on the ideas of Rousseau where learning was hinged around interaction with Nature, Rather, it was through the focus of work, i.e. productive labour, that real learning should take place. The importance of 'traditional' disciplines (subjects) being used in context with the real world of work was exemplified by the rigorous demands of the education of the profession who were an intellectual elite. He was concerned to create working class 'organic intellectuals' who could complete with the hegemonic class. What is more, Gramsci believed that a common curriculum and educational system should be the experience of all young people, partly as a way of combating social (class) divisions. Further, Gramsci was aware of the technological development taking place in the modernizing economy and the consequent changes in workers' labour processes. The move to greater automation was seen as a potentially positive development in that it would eliminate much boring, monotonous and soul destroying manual work and replace it with new more cerebral work that would require a greater intellectual input by workers.

Entwistle in studying Gramsci characterize the need for a second kind of intellectual thus:

> ....the technological-scientific nexus of the new industrialism generates that second kind of intellectual whose intellectualism in organic to the productive process itself. But if the productive process is to serve humanistic and social ends, the new technical-scientific organic intellectual requires, above all, a component of his education to be in historical humanism.

What is implied here is that vocational study and training should go hand in hand with academic (or general) education and that each is mutually beneficial to the other. This would certainly be a requirement for workers in a post-Fordist economy, which would put a premium on adaptability, innovation and self-management. It would also require the fusion of differing forms of knowledge which in turn create 'new knowledge'; knowledge that is formed out of new experiences around work.

Taking the argument a stage further a particular form of integration is being hinted at here. That is, intellectual meaning derived from academic study and academic knowledge, is situated within a particular vocational context. In other words the academic subject must accommodate and de-retify and in so doing will have a qualitative changing influence on the nature of the vocational.

Gramsci's thought on such matters were partly influenced by the ideas of John Dewey whose theories of education were being expounded in the USA in the early years of the 20th century partly as a reaction to the Social Efficiency advocates of the time. Dewey argued for a new kind of 'industrial education' which would have the aim of cultivating 'industrial intelligence'. This notion has similarly with contemporary debates about the need to have 'technological literacy' built into curricula. Also, such a curriculum should be for all, as Dewey was arguing against those who wished to developing training in isolation from general education, a divided system partly based on 'performance' based curriculum which later developed into CBET.

EPISTEMOLOGY OF SKILL

The division between mental and manual labour is based on an epistemlogy and is not merely technical. Although the traditional divisions between mental and manual occupations are in many instances disappearing as a result of changing technology, there is nonetheless still an ideological pecking order of knowledge, skills, training, qualifications and occupations. Ainley uses some of the ideas of Polany, to grapple with this problematic split. He uses Polanyi's examples of riding a bicycle or swimming.

I can say that I know how to ride a bicycle or how to swim but this does not mean that I can tell how I manage to keep my balance or stay afloat. Indeed, if it were possible to become aware of 'the co-ordination of elementary acts' that make up the skill, its performance would be paralysed', for when we focus our attention wholly on a particular, we destroy its meaning; as part of the whole. There are therefore two kinds of knowing that together contribute to knowledge of anything: 'knowing by attending to' and 'knowing by relying on'. The former may be articulated and conscious but it relies on the latter, tacit knowledge, inarticulate and unconscious though it is. It is Polany's argument that all knowledge, including the discoveries of science expressed in the most abstract formulas, 'ultimately.....has the structure of tacit knowledges.

Therefore, the distinction between the superior position of mental over manual skill and knowledge is an arbitrary one. It ".....is merely a social preference for the skilful manipulation of symbols as as a more respectable activity than the skillful manipulation of objects". In fact the demands of emerging 'new' labour processes are ones that require a combination of both mental and manual skills, skills and knowledge that can span both the conception and execution of a particular process and appreciating its connection with other processes.

Ainley also examines how skill determines social position. Skill has been an important determinant of one's wage/salary position as well as matters such as conditions of service and job security. It is also used in the United Kingdom's classification of social class. Very often these assigned categories have less to do with technical reality and more to do with culture or particular power relationships. One example might be a labourer in the construction industry. Although classified a wide variety of separate semi-skilled tasks on a site. A lot of the work will involve a degree of conception such as setting out and levelling in, for example, drain-laying, using various measuring instruments and so on. The main distinction is that there is no recognised form of training or certificate for such work.

QUALIFICATION REFORM

There is growing awareness and support for the view that the present split between vocational and academic education is undesirable. Arguments that the economy needs a new type of labour force coincide with a wish to reduce social divisions. In England and Wales there is growing consensus that GCE. A Levels need reforming as at present they are two narrow. This has recently been strongly expressed and private and state secondary school heads. However, there are different views as to how far A Levels and their vocational 'equivalents'-General National Vocational Qualifications should be brought together. Some would like to see a complete merger. Others want to see a rationalised tracked system either as a definitive aim or as a basis for a more organic process of unification.

It would be useful to examine some of the features of a curriculum which might develop a 'new relationship' between the academic and the vocational. One such attempt has been by Spours & Young who looked at some vocational aspects of academic learning. Concentrating on the interface between school and work they raised important epistemological questions for a future post-16 curriculum. For these writers "academic subject represent both an organized form of knowledge and an existing order". Also, academic disciplines have two major assets; bodies of knowledge and methods of enquiry.

NVQS VERSUS GNVQS

NVQs and GNVQs are by far the most important development in English and Welsh vocational education in recent years. They are an intervention by government in a field which had hitherto been left to develop without any coherence or central direction. Although implemented throughout the same authority, the National Council for Vocational Qualifications, they re beginning to pull vocational education in opposite directions. This can only be understood if it is realized that GNVQs were a reaction to criticisms of NVQs. The original Review of Vocational Qualifications foresaw the bringing of all vocational courses into the NVQ system. Criticisms immediately emerged centering on the issue of 'breadth'. This was to be resolved by 'generic NVQ units', which did not materialize. The 'breadh' argument was particularly potent when related to the education of 16-19 year olds and NCVQ conceded that something 'more suitable' for that age group was needed. Colleges had found NVQs difficult to deliver to full-time students because of the requirements to assess students in the workplace or realistic simulation. The further development of GNVQ has been marked by the PCVQ constantly dragging the courses back to the pure NVQ model, whenever other agencies try to make them more compatible with what is happening elsewhere in the FE curriculum.

At this point we can ask whether NVQs 'correspond' to Foderism or post-Fordism. Firstly, we can note that their introduction as deskilled some courses, e.g. construction craft courses at Level 2. Moreover, they are based on a 'functional analysis' of jobs which breaks down job tasks minutely in a way which recalls and actually has its genesis in Taylorism. This points to a link with Fordism which in fact is stronger than mere 'correspondence'. NVQs are an element in the construction of a neo-Fordism found in its purest form in the new service sector (retailing, catering), but increasingly in the semi-privatised public sector. Employers in these sectors draw on post-Fordist ideas of flexibility only to incorporate them into an alienated and socially divided labour process, based on short-termism, how skills, low trust and low quality. NVQs are to credentialise low skilled jobs, which gives the illusion of upgrading them.

For example an NVQ may be achieved in 'cleaning scient', but without the cleaner receiving any training, let alone job enrichment.

In a post-Fordist society with a strong correspondence between education an the economy some undesirable features could emerge, not dissimilar to some that exist at the moment. This would be the case if there were a core of highly educated and skilled workers and a periphery of low or unskillked workers with minimal education. The educational system to correspond with this would be highly divided and elists.

Alongside this we see the development of a broader based, general vocational curriculum in the form of GNVQs. They are an attempt to rationalise and systematize already existing vocational education, and largely derive from the Business and Technology Education Council's (BTEC) diploma courses. Their (compulsory) core skills, are more tightly specified, and thus have to be addressed specifically by course teams. Further, GNVQs are less dependent on 'competence' ideology and as they are being developed and refined they are becoming quite different from NVQs could 'correspond' with a more truly post-Fordist economy.

CHALLENGE FOR THE LECTURER

A new kind of professionalism

The way both existing and future teachers are prepared for an enriched vocational curriculum could be central to such a curriculum's success. Further, by developing a new kind of working relationship lecturers, a new understanding of the interrelations between academic subjects and vocational practice may be possible; new knowledge may be created. Through a mutual recognition of each other's specialism, lecturers could be both interested and confident enough to 'climb into' the other subject area to see that contribution each can make, while still keeping their roots in their own specialism.

An important political implication here is that most work is based on a division of labour process that tends to fragment knowledge, i.e. that between conception and execution. Surely an important pre-requisite to 'challenge capitalist social relations' is to promote and develop a unified education system that equips workers with the necessary capacities to challenge and overcome such divisions.

One practical example is that of social science graduates' involvement in vocational courses. How might a social science perspective be of use to, say GNVQ Construction students who have little or no knowledge of social science concept? Many higher professional courses have had to grapple with similar issues; for example, most nurse training involves sociological and psychological studies; teachers' courses traditionally involved the sociology of education and so on. In fact it could be argued that sociology as a subject has benefited enormously by being included in specialist areas like education. The so-called 'new sociology of education' as characterised in the 1970s was probably responsible for not only increasing the popularity of sociology as a subject but also helped to transform and improve much of it, especially in the area of cultural analysis.

The possibilities for developing this new kind of professionalism are severely hampered in England and Wales by the highly fragmented and incomplete nature of teacher preparation for the FE sector. Official figures suggest that approximately 60% of lecturers have teacher-training certification. However, this figure has been inflated by the entry into the sector of the sixth-form colleges, whose staff were until recently required by law to be qualified. Also worth nothing is that many o the qualified staff in FE have relatively low-level certificates, such as City & Guides, 730, which is now recognised at NVQ Level 3. The more recently introduced Training and Development Lead Body (TDLB) NVQ units will not help either as they are not only very superficial in their substance and based on a competence model they are also mainly concerned with assessment, rather than more holistic teacher preparation.

Social and professional relationships between lecturers from different specialist backgrounds have often been difficult . The division between vocational departments and the general education department in an English college were described by Gleeson & Mardle, who found suspicion and lack of cooperation between the general studies staff and the vocational lecturers, often less well qualified academically but held in high esteems by their students because of their 'real' industrial experience. These relationships derive from a mismatch between a radically changed FE curriculum and the imperfect system of lecturer preparation which leads to the preparation of outdated practices.

The crisis in Fordism from the mid-1970s brought an end to the predominance of apprenticeship-derived day-release craft and technician courses within technical colleges Their place was taken by full-time courses, which were academic, more general vocational or 'pre-vocational'. The arrival of 16-19 year olds in large numbers tended to erode the difference between further education and schooling. On the other hand, an adult population was also being attracted, sometimes to the same courses, sometimes to newly created provision. As Terry Hyland put it.

> The pace of change in further and adult education in recent years has produced a fluid and uncertain post-school sector in which teachers are required to be flexible, critical, reflective and knowledgeable about a vast range of curricular and organizational matters.

National agreements between the lecturers' union and their employers made explicit the changing role of the lecturer. The various roles to be performed were specified precisely, which was new. Moreover, the list was a long one and touched on neighbouring professional roles, such as those of the counsellor or librarian. At the time of writing, a long-running national dispute in England and Wales hinges on a new concept of flexibility and has put into question the very purpose of post-16 education.

Lecturers have rarely been prepared for these new roles through the pattern of teacher preparation for the sector. Provision remains voluntary, under funded, and dominated by short courses. Discussions of lecturers' professional practice concur that it is based on a particular view of expertise, which is incompatible with the changing curriculum. Glesson & Mardle describe this as the 'culture of bechnism'.

> .....in our experience, most technical teachers not only perceive their primary objective as the provision of appropriately trained industrial personnel, but consider any deviation from that objective as rendering the activity of instruction as impossible task.

Mc Aleer picks up from Johi's the concept of the 'academic model' to describe the way in which vocational teaching takes place in FE.

Traditional courses in FE, as in the rest of the education system, are based on the 'academic model'. The main concern of this model is knowledge, so that teacher and learner both regard their task primarily in terms of knowledge transfer.

According to Johns the perceived status of FE teachers tends to be associated more with academic, technical, or vocational qualifications as well as experience in industry, rather than teaching skills. McAleer describes these status acquisitions as 'educational capital'.

While we may wish to take issue with the idea of the FE curriculum being based on the 'academic model'. McAleer does make the interesting point that this model may be equally true for vocational teachers. In other words the vocational teacher, by virtue of possessing work-related vocational skills and experience, i.e. a form of educational capital, supposedly need not worry too much about style of delivery, because the knowledge and skills to be transmitted are of obvious beneficial relevance to the vocational student.

LECTURER BEYOND THE VOCATIONAL-ACADEMIC DIVIDE

The introduction of GNVQ core skills brings into sharp relief issues of the problem of divisions between vocational and academic/general lecturers. It is only with the introduction of core skills as part of the new GNVQs that vocational lecturers, for the first time, are having to come to terms with being involved with teaching some general education. In order for a core skill area to be taught effectively it has to be situated and contextualised within the vocational area and consequently cooperate relationships will have to be formed between colleagues. This will need to include an elementary understanding of the vocational area by the Communication, Numeracy and IT lectures and a basic understanding and personal ability in the core skill by the vocational specialists.

A useful illustration of this point was made in a short article in The Times Educational Supplement where a discussion of delivery systems for GNVQ Application of Number quotes Dr. Jack Abramsky:

> It is clearly demonstrated that students must demonstrate competence in application of number in their own areas. You cannot accept GCSE results because the students must show they can do it within the context of their own course.

In a follow-up letter, in taking issue with the way he felt he was represented in the article,Abramsky made the following points.

> I did say that it was reasonable to expect staff who deliver the GNVQ course in a particular programme area to be able to integrate, diagnose and assess relevant numerical and mathematical skills within an integrated framework relevant to that particular course, and that these same staff should have, at the very least, the same skills and knowledge that they expect from their students.

He is referring to all lecturers teaching on a GNVQ programme who are not mathematics specialists needing to have a level of proficiency similar to that required of students in the core skill. This should not be confused with, say, specialist mathematical skill and knowledge required on an engineering course, which would be taught by someone with a high standard of mathematical expertise. He concludes by stating:

> The role of maths staff should therefore be seen as a dual support role: to help students overcome learning difficulties with mathematics and consolidate their profile, and to act as consultants to lecturers in a given programme area, to help generate ideas, and to help provide the necessary in- service training in diagnosis and assessment to give these same lecturers the confidence to implement Application of Number within their own course area.

This example illustrate well a particular kind of thinking about relationships between vocationalists and academics or generalists, in this case the mathematicians. It also illustrates the already changing role of the lecturer, in relationship to expertise and in relationship to colleagues outside his or her own field of expertise. All those involved in lecturer preparation will increasingly have to confront these changing circumstances.

Chapter-8

Beyond the New Vocationalism

The root cause of the misconceptions and malfeasances described in this book is Britain's economic decline. By December 1982 British manufacturing production had fallen to the level at which it stood in 1976. With growing unemployment, the education system was a convenient scapegoat for industry and politicians alike. The banner of skills and vocationalism had already been hoisted in James Callagahan's 1976 Ruskin college speech. It was a simple matter to install the new doctrine through the powerful and non-accountable agency of the Manpower Services Commission. What might have been thought less simple but which in the event turned out to be quite straightforward, was the enlistment of support for the vocabulary of skills and vocational preparation from the academic community. The result is that over. The last five years, with launching of YTS, TVEI and LPVE in quick succession, the language of the new vocationalism has become a commonplace of staff room discourse.

There is, however, absolutely no evidence to suggest that the new jargon has addressed fundamental issues to do with secondary education or, for that matter, with our industrial performance. In education these issues are plain enough, and brought sharply in focus by the contributions of Mike Golby and Bernard Barker. The knowledge-centred, examination dominated curriculum of the grammar school has been applied uncritically to comprehensive schools. A form of education intended for 'academic' pupils has been applied, with alienating consequences, to pupils of all abilities.

Even, so, it should be noted that schools have been remarkably successful within this canon so warmly espoused by parents and politicians, in delivering examination results. Simon has recorded the prodigious improvement made by schools over the last ten years, since comprehensive organisation took hold. If getting jobs really were a matter of securing exam qualifications, youth unemployment would scarcely exist. But since there are so few jobs, it does; and it is politically expedient for the Prime Minister to describe education as a disaster and to argue that joblessness stems not from government infirmity but from an absence of work-related skills.

We can hardly be surprised if politician regard attack as a form of defence, although the sustained vilification to which schools and teachers have been so unjustly treated bodes ill for our intellectual future as nation and ought not to be forgotten, nor forgiven, too readily. But the fervour with which the doctrine of skills and vocationalism has been embraced is more serious, for two reasons. First, it embodies a rhetoric which is, as Barker puts it, 'almost meaningless for education'. An Jerry Wellington's inquires suggest it has, in reality, as little meaning for employers: their needs 'are not framed in terms of skills'. To give the concept of a skill any durability, it is necessary to dress it up as a new, 'transferable' entity. The Further Education Unit has embarked on this strategy with great vigour, but the exercise - as Paul Grosch demonstrates -will not bear close scrutiny. The 'core skills' component of the YTS depends on the same device, orchestrated in this case by the Institute of Manpower Studies; but Ruth Jonathan shows with stardk clarity the Emperor still does not appear to have any clothes'.

And the rhetoric of skills is not merely meaningless: it diverts us in a most damaging way from the real task, which must be to develop a form of secondary education that will prepare our children, in Golby's words, to become 'good parents, full members of the community, thinking citizens and critical participants in an evolving democracy'. To be sure, that traditional grammar-school curriculum ill equips them for these tasks; but the pre-vocational skills-based curriculum is just as inept. As Barker observes, it amounts to little more than 'a retreaded "package' for slow learners'.

This is the second consequence of the skills bonanza-its inherent divisiveness. At a time when cohesion and communality are so desirable - when the consequences of social and sectarian divisions are clearer than ever, and more harmful than ever - the last thing we should be introducing into schools is a form of curriculum which has repeatedly down itself, whenever it has been tried, as one which reinforces distinctions between pupils by setting up the 'practical' alongside the 'academic'. Yet it is not inconceivable that a least some of those involved in this work are well aware of these consequences, and see them as desirable. Ranson quotes from an interview with a DES official.

> There has not been selection because we are beginning to create aspirations which increasingly society cannot match. In some ways this points to the success of education in contrast to the public mythology which has been crated. We have to select: to ration the educational opportunities to meet the job opportunities.

The reference here to the myth that schools have failed, when the reverse is demonstrably the case, its interesting too. And so is the view of another DES official interviewed by Ranson: 'If we have a highly educated and idle population we may possibly anticipate more serious social conflict. People must be educated once more to know their place'. This kind of social thinking, so characteristic of the mid-Victorians, hardly squares with the public rhetoric of an 'enterprise culture'. But if we should want to stigmatize part of the population by offering them an impoverished curriculum, the language of 'vocational preparation' is the simplest way to do it. The de Ville committee's proposal that a separate vocational qualification should be offered alongside GCSE does nothing to dispel these doubts. Neither does the government's determination to buttress the traditional grammar-school curriculum for the most 'academic' pupils by introducing a 'distinction' and 'merit' category into GCSE, and AS level at 18 plus as a further reinforcement to A-level.

In all these ways, skills and vocationalism not only deflect us from reinterpreting secondary education: they undermine attempts to give meaning to the notion of a common curriculum. But they fail too, as I have suggested to treat the shortcomings of our industrial performance. Senker's study of TVEI concludes that:

If is difficult to make a case for technical education in schools on straightforward economic grounds, Japanese 'failure' to incorporate significant elements of technical education in school curricula does not seem to have impaired their country's economic performance.

The point is made more generally in Ollerenshaw's perceptive and authoritative survey of education and industry.

> Wherein does any potential threat of manpower planning lie? It lies in too narrow or too early specialization in school or in further or higher education in subject disciplines which.....do not form a sound or broad enough base for rapidly changing types of employment....... It lies in any too-detailed attempts to match courses to current employment needs which may later collapse........It lies in uniformity, it centrally administered and adjudicated examination.....It lies in trying to manipulate the education system to meet forecast manpower requirements.

What is particularly interesting about Ollerenshaw's list is that all these threats to industrial health are current policy, and some of them are in favour with other political parties the effect of 'voc-prep' is to foreshorten a broad education from 11, the new CTCs imply a remstatement of the 11-plus, so that it ends at 14 not 16; the rhetoric of the 15-18 curriculum narrows and prematurely specializers; YTS and CPVE both gear the post-16 curriculum to current employment needs, through their close linkage with industrial training; the new GCSE examination at 16-plus will be nationally controlled through its grade criteria; the manipulation of further and higher education to meet currently perceived needs is now a major objective of MSC and DES planning as large has noticed?

The essential point about the huge investments in higher education in Japan, Singapore, South Korea and the rest is that they are aimed not merely at meeting the narrow, cannon-fodder demands for particular technical skills; they seek to produced multi-disciplinary graduates, ready to handle the kaleidoscopic shifts of information-based economics.

Several observers have noted that government policies inclines towards a West German model of education and training. And the political lobby which argues that an 'anti-industrial culture' exists in Britain - which methods such as 'Education for Capability ', with its emphasis on the German concept of technique as the missing element in our schools, would allegedly eliminate - draws support from the same source. It is very evident that the MSC seeks to move in this direction, for the IMS report Competence and Competition took pains to emphasis the merits of West German arrangements. It need to be said that not only is much of this advocacy based on a misconception; it is also the case that the West Germans are beginning to doubt whether their model - which is, after all, as old as this century - gives them the flexibility modern economics needs, and which that of Japan clearly possesses.

In the short terms, German approaches largely remove 16-18 year olds from the unemployment register. But their 'dual system' links the workplace with a broadly-based education in the - a very different matter from the improvised offerings of the MSC 'core skills' programme. The Germans have a concept of 'formation', of combined education and training of the whole person which imposes vastly increased costs upon German industry. German industrialists have come to see the economic benefits of this. In the UK training during employment is a low priority on which very small lsums are spent. Moreover, British firms are a byword for philistine shortsightedness - even the director of the MSC has had to resort to shaming them into some kind of training activity. As Clive Seale points out, 'The CBI positioin on the curriculum of the YTS allows little room for liberal educational principle.

It is unlikely that British industry could now find the money to finance a German-style 'formation' system, even if it had the will to do so. And German' doubts about the future efficiency of their system surfaced when, at an international conference, their team:

> Spoke of an uphill struggle against the divisiveness of their system, which provides excellent vocational education for the majority but cuts them off from the academic few......They voiced fears that neither (group) is being prepared for a changing world.

But the Germans have, of course, made little progress towards a system of comprehensive schools; it seems sad that rather than build on this national assets, we are being urged to support policies which can only reinforce divisiveness.

What is less generally known, though, it that technique has no place in the German school curriculum. Horner remarks: The alleged "third culture" either does not appear at all on the West German secondary school curriculum or is merely allotted an entirely marginal position. West German industrial success owes nothing to the vocational strategies being urged on British schools by the MSC, the IEU and the 'Education for Capability' movement : 'Primary and secondary education in the Federal Republic of Germany has....stressed the learning at school is to be free of all economic ends of purposes'. This may come as a surprise, enjoined as we are by the 1985 White Paper, Better Schools, that 'It is vital that schools should always remember that preparation for working life is one of their principal functions'.

The reason for this seeming neglect is not that the West Germans despise technology: quite the reverse. They recognize that it is not only different from science, but a demanding intellectual activity for professional courses at degree level. Advanced technical education in the German Technische Hochschule, as Horner points out, differs from that offered in English polytechnics and colleges by its freedom from vocational concerns and its academic parity with traditional arts and science courses. The lesson for us here is clear: nothing to be gained by pretending that watered-down, science-linked 'technology courses 14-16 advance the purpose of either education or industry.

In any event, the Technische Hochschulen are now showing their age - as, indeed, is the divided West German system. Now often rechristened as Technische Universitaten to enhance their status, growth in engineering students has still been outstripped, James 12 points out, 'by he growth in students numbers for social science an economics'. As regards British admiration for Germany's dual system, James offers a words of warning:

> Unfortunately, there is a large element of myth about this picture. The apprenticeship system is a rather odd relic of an odd past, and is far from being a purpose-built tool to handle the microchip....In short, Ger-

many has been training the young to repair bridges and cars in a customer society, but not really to service a technical revolution ......During the past 15 years. Germany has lost more jobs than Britain .....Many Germany failure to adjust technical training to new circumstances.

Yet this 'odd' and outdated system seems to monopolize the thinking of the government, the MSC and the DES. And it is system, with its compliant public acceptance of a division of pupils into different categories, which derives from a much more authoritarian society than Britain's. Our political masters seems to have forgotten that the idea of the 11-plus eventually become so repugnant to the polity that it was a prime political issue. They have forgotten too, that in the 11-16 common school linked to the 16-19 territory college we have developed our own British solution, and an infinitely better one.

But such a solution requires an altogether more hard-headed view of technology as technic than the soft options masquerading under the banner of technology TVEI 14-16 courses. It must build on physics and mathematics, which are the appropriate pre-university preparation for it. There is, though; great virtue in the quite different argument that a design-based techno-aesthetic course should be a core component. Such courses, linking crafts with plastic and graphic art and kept well clear of misleading and pretentious associations with school science, treat technology in a broad, liberal sense altogether appropriate for the 11-16 curriculum their justification has everything to do with education and nothing to do with vocational ends. It is regrettable that HMI have plumped for scientized school technology, despite its absence from the curriculum of German and Japanese schools and the poor educational case for it.

In technology as in other school there is a continuation of purpose once education consideration are pushed aside in the urge to be 'relevant'. Sir keith Joseph has done much harm with his assertion that.

What is taught needs to be more obviously applicable to the real world that the young see and will see about them. One very direct example of this approach has been the TVEI but the approach needs also to colour the primary curriculum, teacher training and examinations.

We can agree that the learning encounter devised by the teacher must have connectedness with the pupil's state of mind; otherwise it will be merely inert, decontextualized knowledge of the kind which features prominently in the grammar-school curriculum. But the test - as Barker's discussion bears out - is to do both with what is taught and how it is taught. Writing an ode to a tractor may be very relevant to the real world of a country primary school, yet very borning. Discussing dinosaurs is quite irrelevant in the modern world, yet can be totally enthrilling. This is not to say that content is untotally enthrilling. This is not to say that content is un-important, that only process matters - a view which a fashionable but absurd. It is to assert that both matter, and both depend on the professional judgement of teachers rather than imposed and misleading doctrines - whether these doctrines emanate from government minister, captains of industry or, for the matter, educationist.

The Joseph doctrine of relevance leads to a further misconception, since it implies that the educational encounter is to be derived from an analysis of whatever activity is to be classed as 'relevant'. Much of the appeal of vocationalism stems from its evident preoccupation with what is 'relevant', but attempts to put pedagogical flesh on the rhetorical bones inevitably lead to the kind of banalities set forth by writers like Charters and Bobbitt in the US during, the 1920s. Bode's masterful annihilation of this approach should be compulsory reading for anyone contemplating it, and certainly for the FLU its whole voc-prep' philosophy, as Paul Grosch makes clear is pure Bobbitry, and it is extraordinary that a view of education discredited fifty years ago should be so naively embraced today. Our reluctance to choose politicians and administrators with a sense of historical perspective means that we often, as taxpayers, indulge them in the expensive luxury of making the same mistakes again and again. Stone makes this point tellingly, in discussing the vocational attack on the liberal tradition of Scottish education at the turn of the century: The utilitarians won, of course; and the irony at the end of all this should be spelled out; we are now less literate than we were in 1900, and I suspect that we have relatively fewer skills than we had in 1870, when the educational debate got under way.

Richard Smith's study of the DES - funded Teacher Education Project shows the dangers of applying the doctrine of 'relevance' to teacher training - a specific items on Sir Keith Joseph's 1983 list, subsequently given the full treatment in the White Paper, Teaching Quality. It is said that Sir Keith regards this wonderfully wrong-headed document as his greatest achievement of office; certainly the urge to base the training course on what is 'relevant' to classroom experience is evident on every page. It is the great merit of Smith's chapter that it turns the argument of relevance on its head. For the shows that attempts to define teaching as a series of learnable, relevant skills, far from appealing to our common sense, fly in the face of it:

> It is so obvious that personality and character are crucially important in teacher that the point would not be worth making were it not that too much emphasis on skills is effectively a denial of it.

More generally, we may say that talk of 'relevance' is a superficially beguiling way of dismissing education as an instrumental activity. The education of teachers is only worth doing if it relates directly to their work in classroom; the education of pupils must similarly relate exclusively to what can be justified as worth knowing in the 'real world', it is a view dismissive not only of education, but also of those who are to be educated. For they are viewed not as ends, themselves capable of acting as moral agents, and therefore to be equipped as such; they are rather means, functionaries who will demonstrate their skills in their skills in the classroom, pupils who will possess the required range of competences. Because it is a diminished view of the educational encounter, it lends itself to the reductionism of skills, and to such futile exercises as the attempt to separate skills from knowledge, attitudes and values. Wellington's discussion is helpful here; and it should be noted that the HMI 'Red Book' series while showing an admirable concern for a broad core 'entitlement curriculum' 11-16, entirely misses the point of such a programme by insisting that it can be fragmented in this way. The same tedious litany of 'knowledge, skills, attitudes and values' is prominent in other HMI publications and confirms one's suspicious that senior HMI have succeumbed to the virus technocraticus managerialis. The cure is long and painful Fortunately most teachers are immune.

Their immunity is guaranteed by their implicit understanding that education is more than a collection of competencies: it is, in Oakeshott's phrase, about helping pupils to make something of themselves'. The enterprises of education is not primarily to do with knowledge, and it is unfortunate that HMI, in their 'Red Book' prescriptions, have allowed epistemology to dominate their thinking. Of course content matters, and it needs to be broadly based if pupils are to acquire the capacity to act rationally; but it is only a means to this end, which depends primarily on the art of judgement. Education is essentially a practical and moral enterprises, and we can endorse Smith's conclusion; It looks as though "virtues" rather than "skill" should be at the heart of our conception of a good teacher'; and there is a symmetry between teacher and taught; teachers need to be moral agents in order that their pupils should learn how to become moral agents too.

Golby's point in his opening chapter is on all fours with this views schools is primarily about the virtues of the considered line. And one might add, with Socrates, that 'the unexamined life is not work the living'. Education, in language of skills and vocationalism, no more addresses these moral principles than it does in the grammar-school language of knowledge and examinations. To substitute skill for knowledge is only to pass from one side to the other of the same counterfeit coin. Neither a purely vocational not a purely epistemological approach can constitute a basis for an educational programme.

From the evidence discussed here, however, it would appear that the two approaches beget each other: the 1943 Norwood report's division into the academic on the one hand, and the technical and practical on the other, might perhaps the regarded as the acceptance of the inevitable. Each is parasitic on the other: the academic curriculum leading to GCSE bears a symbolic relationship with the vocational curriculum leading to a form of CPVE at 16-plus. This innate bipartism has been accurately captured by Sir Keith Joseph.

A balance has to be achieved between the values of the broad liberal tradition on the one hand, and the tradition of useful education on the other....I do not deplore this (liberal) tradition at all it is vital for the preservation and enrichment of our culture....But I do deplore the one-sidedness and dominance of that tradition.

So de we, in this book; but to suppose that some mix of the 'old humanist tradition, with the 'industrial training' model will produce sound 'public education' (to use Raymond Williams's terms) is like trying to make yoghourt from stirring chalk and cheese.

The tragedy of construing the secondary curriculum in this way is that it commits us to a sterile and misconceived dualism: our children are to be yoked for ever alongside each other in an unnecessary and destructive misalliance, like characters in a Greek tragedy. As wellington reminds us, Huxley had the vision half a century ago to perceive this, and argues that 'technical education should become more liberal, and academic education a more adequate preparation for everyday life'.

Huxley was surely right to point towards a single, unified from of curriculum which could learn from the errors of the two malformations. But to believe that his unity cab be achieved by more of one and less of the other misses the point that neither ingredient is equal to the task. Furthermore, it is to suppose that we should seek some kind of blend, when what is really need edis a fresh synthesis. Education as an ethical and political enterprise - and secondary education for all for life in modern society cannot settle for less-must address precisely those practical and moral issues which inspired the Greeks to invent liberal education. It is our peculiarly British tragedy that we fostered, in the last century a perverted form of liberal education under the 1904 Regulations for grammar schools. Instead of preparing pupils, as Aristotle had argued, for the active task of the moral agent, the curriculum esteemed knowledge as non-negotiable and absolutely determined, to fit them for the passive role of the moral judge.

But it is of the essence of liberal education that it must be reinterpreted in every age, and it is precisely this task which we must address ourselves to now. As Golby has pointed out, our obsession with skills and vocationalism is incompatible with educational concerns, and has diverted us from these important matters. It has led to official publications invested with central authority, yet offering 'no discernible view of curriculum design'. It led to many millions of pounds being spent, through the TVEI on a handful to pupils in a divisive fashion which reinforces locker-room prejudice against intellectual inquiry and for new technology, but leave untouched any consideration of the real issues for secondary education. And in higher education, the instrumentalism of the vocationalists has damaged teacher education, distorted funding for degree courses and given the seal of approval to a short-sighted and economically unsound approach to manpower planning.

Much of this lost ground cannot be recovered. But if we can recover our vision of liberal education, and place a concept of the virtues at the heart of the school curriculum, we can turn out present uncertainties and tribulations to good account. There will be no easy answers; much discussion and deliberation he head. But we can no longer evade the task.

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